THE OIL WEEKLY

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The Gulf Publishing Company.

Developments in the Southwest

WHAT effect has Texas and Louisiana development had upon the petroleum industry at large during the past twelve months?

In answer, it is not too much to say that the production in Texas and Louisiana during the past year—new production and new fields opened up—has saved the gasoline situation, has made safe the lubricant situation and has filled the rapidly diminishing refined products stocks to the point where the jobber and the refiner daily wondered how long it would last.

The past twelve months have seen development undertaken in Texas on a scale surpassing anything ever undertaken in the history of petroleum before. Four thousand one hundred and ninety-five completions were recorded in the oil fields and in wildcat territory in Texas alone during the past twelve months, resulting in the bringing in of more than a million and a half barrels of **initial** production, and a total production of nearly 80,00,000 barrels of oil. During the twelve months ending October 1, 1918, the total production for Texas was less than 34,000,000 barrels.

New fields have been opened up in some sections, but the big production came from the further development of fields already discovered, but just "scratched."

The production in South Louisiana during the past twelve months amounted to 2,357,000, about the same as last year. North Louisiana's total production for the past twelve months was 15,337,120 barrels—and if proper pipe line facilities could have been had, this production would have been more than doubled.

Not alone in production development did Texas lead the world during the past twelve months. In the matter of refineries, Texas added a large number of plants and is right now adding more. Texas and Louisiana last year refined more than one-fourth of all the oil produced in the United States, and now Texas alone is doing this.

There are at present 63 refineries in operation in Texas, with a present capacity of about 400,000 barrels a day. There are 34 plants under construction in Texas, ranging in capacity from 100 barrels a day to 60,000 barrels a day, and nearly every plant in the state is adding to its capacity. Total capacity of plants under construction as shown by the figures gathered by The OIL WEEKLY's staff and printed in detail elsewhere in this journal, will be 142,300 barrels, while nearly 30 plants are planned. At the time the statistics were totaled up, the number of proposed plants was 26. Since that time we have learned of several more.

In this, the third annual statistical issue of The OIL WEEKLY, we have endeavored to present as accurate a view of the Southwestern territory as we have been able to secure through a well equipped editorial department. The results of the work we leave to you.

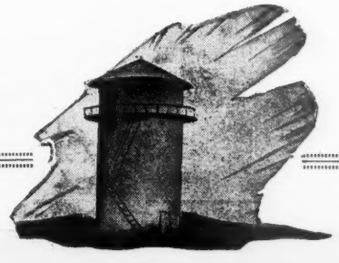
THE BURKBURNETT SITUATION

If the action taken a few days ago by the leading independent producers in the Burkburnett pool had been taken two or three months ago, and if it had had the moral effect on the other producers which it should have had, the recent cut of 25 cents per barrels in Burkburnett crude never would have come.

And if the producers stick by their agreement and get the remainder of the producers in that section to abide by the agreement, the price will, in the opinion of The OIL WEEKLY, go back to $2.25 very shortly. Pipe line companies have never at any time claimed that Burkburnett crude was not worth more than $2.25 per barrel, but the action of several producers in offering their crude as low as $1 per barrel to purchasers who were glad to get it at that price, naturally caused the cut. In other words, outside refineries—and refineries at Wichita Falls—were buying crude for much less than $2.25 and selling the refined products from it in competition with refining companies whose affiliated pipe line companies were paying $2.25 a barrel for it. The result was most logical—a cut.

Although neither a prophet nor the son of a prophet, The OIL WEEKLY is willing to make this one prophecy: Burkburnett crude will be selling at a price considerably in excess of $2.25 per barrel within the next six months, unless the producers themselves hold the market down.

It is true that many of the companies, financed on small tracts with small capital available for development purposes, have been compelled to sell crude at less than the market price in order to move all of their oil, or a considerable part of it, and meet their pay rolls. This situation is deplorable—is the logical result of the frenzied game of starting companies at Burkburnett, but should be within a very short time relieved by the completion of additional lines by major companies able and willing to pay a fair price for the crude.



A PETROLEUM CHAIR

That the recently appointed oil industries committee of the Houston Chamber of Commerce can accomplish much good for the oil industry in the Gulf Coast section was indicated by the first meeting of the committee this week. As a result of the committee's meeting and work previously done by the Chamber of Commerce, it appears likely that a chair of petroleum technology and chemistry may be installed at Rice Institute. This is something which individual effort for some time on the part of many interested in such a chair has failed to accomplish.

By the installation of such a department Rice Institute can achieve a benefit for the oil industry in the Gulf Coast which will be equalled only by the benefits to accrue to the students taking such a course. Rice Institute has suffered from the accusation—and apparently a just one—that it has diverged from the practical and gone after the idealistic. Now is a chance for Rice Institute to do something practically beneficial.

COMPLETIONS AT DESDEMONA

Dallas, Texas, Oct. 17.—Cosden's No. 6 Hamilton in the Desdemona field is making round 500 barrels at 2645 feet.

Mid-Kansas Oil & Gas Co.'s No. 7 Dabney s making 2000 barrels at 2697 feet.

Texas Oklahoma Oil & Development Co.'s No. 2 Carruth is good for 500 barrels at 2731 eet. This company's No. 1 Carruth was ompleted for 3000 barrels in August and is ow dry.

McMann Oil Co.'s No. 3 Reynolds is good or 1500 barrels.

Heart of the Duke Oil Co.'s No. 1 Harrel ooks like a well.

MAKING GAS IN PALO PINTO COUNTY

Dallas, Texas, Oct. 17.—The Texas & Pacific well, on the Foreman, seven miles north of Strawn in Palo Pinto County, is making gas at 3535 feet, top of sand, and the boiler is being moved back.

SHOWING IN STEPHENS

Dallas, Texas, Oct. 17.—The Magnolia Petroleum Co.'s No. 3 Frost, in Stephens County, has a showing at 3221 feet and the boiler is being moved back.

GOOD WELL IN PANUCO FIELD

Tampico, Oct. 16—(Special)—The East Coast Oil Co.'s No. 401, the discovery well in the Panuco field, after being deepened, came in flowing approximately 15,000 barrels. When first completed it had an initial production of 500 barrels, at which rate it was producing when it was decided to deepen the hole.

TWO WELLS GET SALT WATER

West Columbia, Oct. 17.—The Prudential Securities' No. 1 Bartlett at West Columbia was a salt water well around 3335 feet. It shut down after testing.

The Texas Company's No. 18 Hogg, in the same field, bailed salt water at about 3030 feet. It is setting packer. No. 18 Hogg offsets the Gulf Production Co.'s No. 1 Ayers, completed around the same depth several weeks ago, is flowing at the rate of 8000 barrels, 16 per cent of which is water and b. s.

STEPHENS COUNTY WELLS

Dallas, Texas, Oct. 17.—Cosden Oil & Gas Co.'s No. 1 Compton, in the southwest corner of Stephens County, is making gas at 3740 feet, and had a 300 quart shot go off prematurely. It is preparing to give another shot.

The Sun Company's No. 1A Rosenquest is making 30 barrels at 1805 feet. No. B1 Jennings is making nine million feet of gas at 3175 feet.

Skelley & Sankey's No. 1 Branch is making salt water at 3170 feet.

GAS ASSOCIATION CHANGES NAME

The Texas Gas Association, which closed a two days' session Wednesday in Houston, before adjourning voted to change the name of the association to the South Central Gas Association. The change was made necessary by the requests of several men outside the state who wished to become members, but could not do so because of the fact that the association represented only Texas.

The meeting was attended by approximately 40 men engaged in the gas business, and was called for the purpose of discussing ways and means for an educational campaign to be carried on among fuel user to conserve gas. The economic operation of plans was also taken up and discussed.

This one edition of The OIL WEEKLY required more than nine tons of paper—nearly 18,500 pounds, to be more exact—and more than 100 pounds of ink, in its printing.

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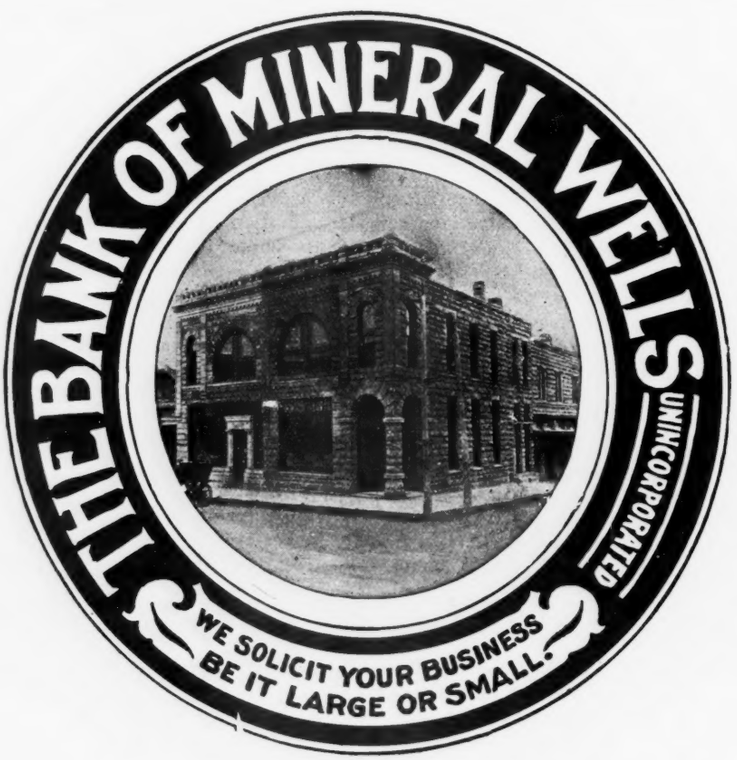

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SITUATIONS WANTED—FEMALE

REFINED young widow with baby 1 year old wishes to keep house for home without or with 1 child over 6 years of age, here in city of within a radius of 2, miles. Address 1880. Chronicle.

EDUCATED widow, first class cook and housekeeper, wishes position at once. Address 1387, Chronicle.

WIDOW with 3 small children to support wants employment, housekeeping preferred. Address 4015X, Post.

NEAT young widow with little girl wishes position as housekeeper; no objection to leaving city. Address 1107 Chronicle.

AN ELDERLY refined woman practically alone in the world wants a position where she wouldn't be treated as a servant; capable of filling a responsible position. What have you to offer? Address 3460, this office.

POSITION wanted by widow with child, as housekeeper for elderly couple; consider home more than wages. Address 1697 Chronicle.

WIDOW lady with two little girls wants position as housekeeper, good home desired more than wages. Address 1232, Chronicle.

LADY with six children, infant to 11 years, would pay reasonable price for bundles of second-hand clothing. Address 4151X, Post.

YOUNG respectable woman with 8 year old boy wants position as housekeeper for employed or aged couple or section house; will leave city. Address 3125X, Post.

WIDOW lady, one child, wants work; housekeeping or cleaning offices preferred. Call Preston 5[illegible]

SITUATIONS WANTED—FEMALE

WIDOW, 35 years old, a good cook has 1 child 6 years old wants position as housekeeper and to care for not more than 3 children. Phone Tay-

SITUATIONS WANTED—FEMALE

WANTED—Position as housekeeper or [illegible] dress by young widow with one child 18 months old. Address 4040X, Post.

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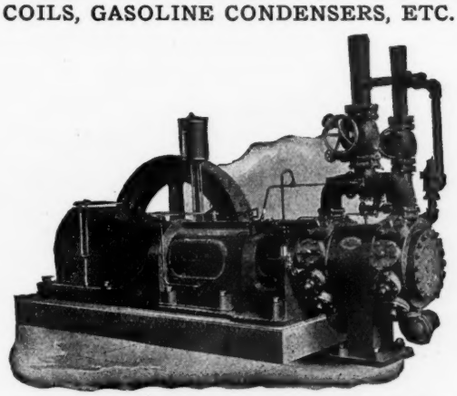

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FACING DEATH IN A BREAD OVEN; OR, GIVE ME AIR OR GIVE ME DEATH

THE above title is that of a one-reel melodrama staged by two well known American geologists and an American truck driver in a little Mexican town called Alhego, up the Panuco River from Tampico, about two or three weeks ago. Principal actors include Edwin B. Hopkins, independent geologist, and Chief Geologist Eckes of the Texas Company, a truck driver whose name was lost in the shuffle, a fat, greasy Mexican woman whose aversion for bathing forms a feature of the drama, and some few hundred Mexican pro-Carranza and pro-Villa soldiers.

When the Americans reached the little town it happened that a Villista commander, not having anything else to do during these stirring days down in Mexico, decided to take Alhego. The Carranzistas, on the other hand, needed Alhego, and raised serious objection when the Villistas approached. A long distance scrap resulted, and the Villistas, having the fewer number of men, retreated. This might be termed the prologue of the play.

The real fun started during that night when the Villistas, reinforced in numbers and courage, returned to the fray. The bullets flew fast and furious, at least Hopkins admits they sounded like they were furious, and the Americans, after first seeking the protection of their saddles—which, according to Mexican hotel etiquette they had piled up by their beds—decided that mere leather was not sufficient breastworks.

The only house of any substantial character in the town was an adobe bakery. So the Americans hied them to the bakery.

They had been baking bread the day before, says Geologist Hopkins, and the air was warm —and odoriferous. Here it was that the really interesting part occurred.

Ping! sang the bullets. And the Americans dodged. Yes, they admit that they dodged every time a Mauser sang out.

And it came to pass as they dodged and perspired, a fat, very greasy, and, oh, so odoriferous, Mexican woman drew near. She, too, sought the protection of the 'dobe oven. Hopkins says that apparently she was in more danger of suffocating from the dirt on her than from the bullets that whined overhead, but she didn't know it. Close up to the protecting presence of the signors she crept, until her bulky, if not comely, form loomed up like a garbage boat in a New York harbor on a June evening.

Hopkins says it wouldn't have been so bad, only the bullets kept whining, and when a Mauser whines, you're bound to dodge. So they dodged. He wouldn't say which one, but one of the American trio was compelled to dodge right down into the sumptuous but somewhat smelly bosom of the senora. The unfortunate dodged, clapped his hand to his nose, and came up for air.

"Ping!" whined another bullet. Down ducked the American, hand to his nose.

Hopkins thinks that they could have lasted but a short period longer, when the Villistas took the city. They staggered back to the hostelry, and the most unfortunate of the three sought solace in a small bottle.

"Gad, this smells good," he breathed, taking a long smell at the bottle. And the true pathos of the situation in the oven can be best explained by the label on the bottle the American thought "smelled good."

The label said "Ammonia."

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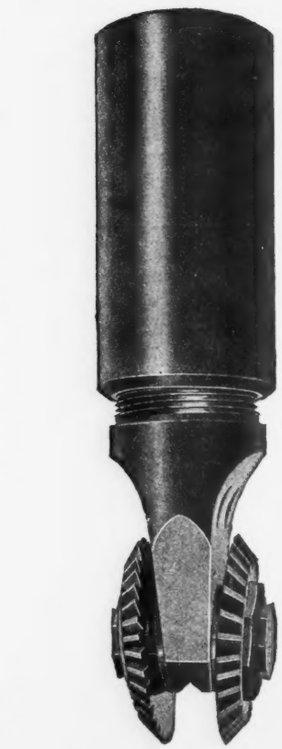

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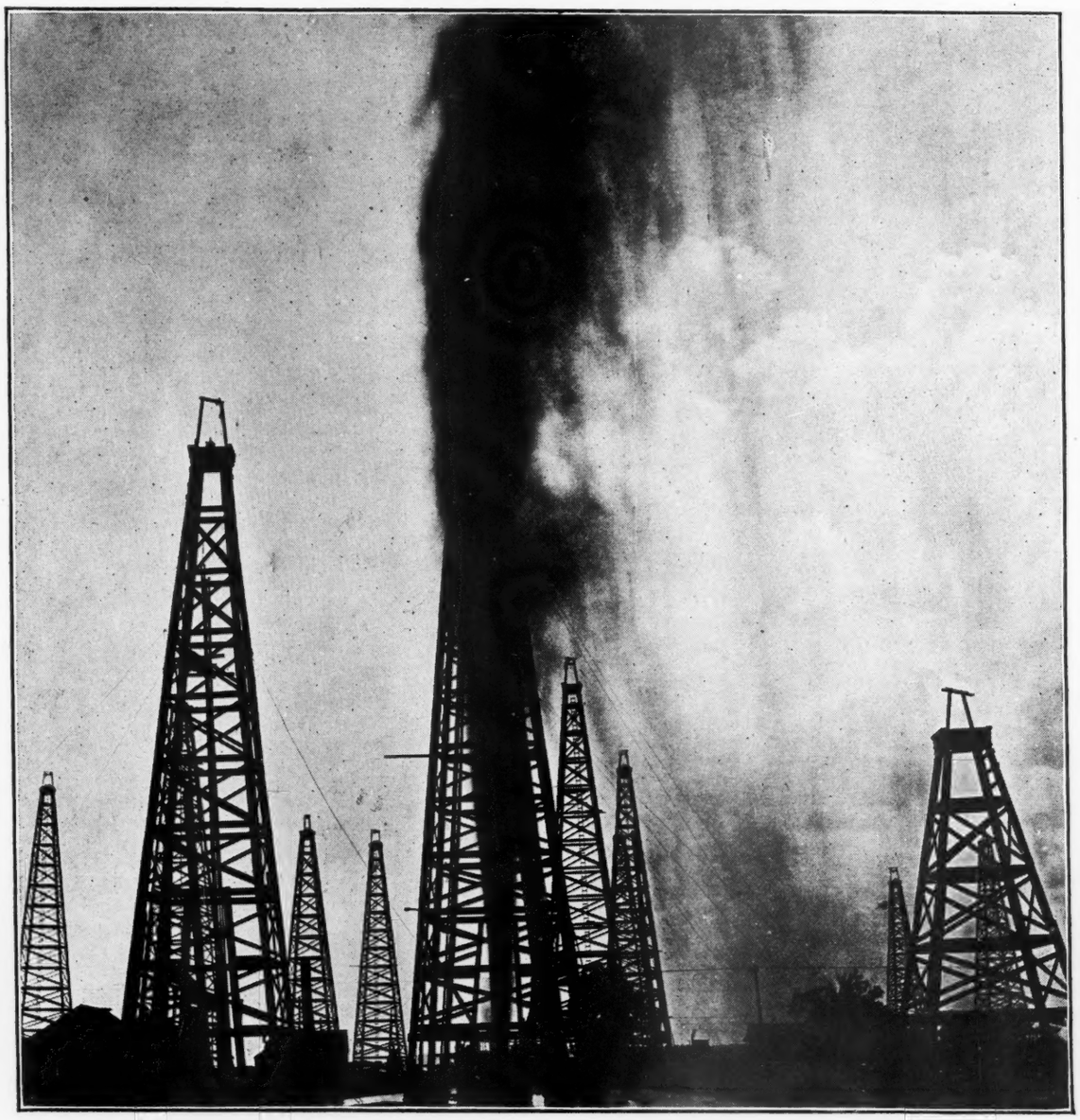
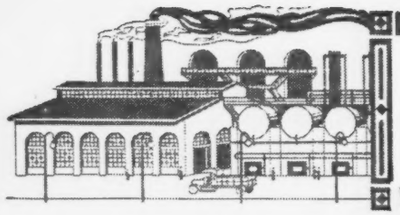
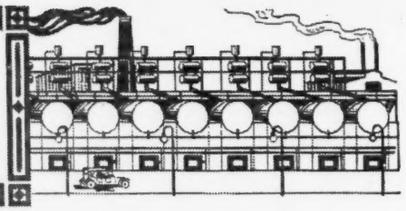


—Photo, Allen

E. F. Simms & Co.'s No. 16 Sweet at Goose Creek, rated at 30,000 to 35,000 bbls., the biggest well ever completed at Goose Creek. August 5, 1917.



REFINERY ACTIVITIES



SKIMMING PLANTS WASTING LUB STOCK.

The topping plants operating on West Texas crude oil are wasting a valuable stock of lubricating oils in turning all the residue from first runs into fuel oil, as pointed out by an independent refiner this week.

It was stated that Ranger crude, for example, has about the same analysis as Pennsylvania light oil, so valuable for its lubricating constituents. The difference in market price of the oil in the two districts is explained by the location of the fields, the transportation charges on the removal of West Texas crude to refining centres serving to level up the actual cost of the crude at the point of refining.

Practically all the new plants in North and West Texas are equipped only to make first or first and second runs. The remainder of the stock is sold as fuel oil.

It has been suggested by this publication that a lubricating plant, with a capacity to take the output of all skimming plants in the district and reduce this oil to its base, would be a highly profitable venture.

CASING HEAD PLANT FOR BURK

The Humble Oil & Refining Company has under construction at Burkburnett a casing head gasoline plant with a daily capacity of half a million feet of gas.

INVINCIBLE REFINERY'S PROGRAM

The Fort Worth plant of the Invincible Oil Company, formerly known as the plant of the Montrose Oil & Refining Co., is expected to be completed during the coming week. It will start with a daily capacity of 3000 barrels.

The Invincible Oil Co. plans to increase the size of its Shreveport plant, formerly known as the Louisiana Oil & Refining Co.'s plant, to 6000 barrels shortly. This company has valuable holdings in several North Louisiana fields, as well as Texas fields.

While no formal announcement has been made, it is understood that the Invincible Oil Co. plans to construct a large refinery on the Houston Ship Channel.

OIL SHALES IN COLORADO.

So many inquiries regarding the future possibilities of the oil shale industry in the United States, and especially as to the deposits in the Rocky Mountain region, have been received by the Bureau of Mines of the state of Colorado that the commissioner, Horace F. Lunt, by direction of Governor A. H. Shoup, has prepared, in co-operation with the state coal mine inspector and the state oil inspector, a bulletin with maps and pictures on the oil shales in western and northwestern Colorado.

The object of the bulletin, as stated, is to put before the public in brief and non-technical form the most recent and authoritative information regarding oil shale, particularly the Colorado deposits. The bulletin is free and can be obtained by addressing the Commissioner of Mines, State Capitol, Denver.

SALE OF EVANS THWING REFINERY CONFIRMED.

The sale of the Evans-Thwing refinery, nearing completion in Fort Worth, to the White Eagle Refining Company of Wichita, Kansas, has been announced by the purchaser, and the deal is said to involve about $1,000,000. The Evans-Thwing plant was built to run 6000 barrels of crude a day.

The announcement of the deal also carries the statement that the White Eagle is contemplating a pipe line from Fort Worth to Burkburnett.

The White Eagle Company has a plant in operation at Augusta, Kansas, and has prospective production acreage in Oklahoma, Kansas and Texas. O. O. Buckles will be in charge of the company's Texas interests in the producing fields, and Ira Eels will be refinery manager.

The announcement of this sale was carried in this journal last week.

METROPOLITAN PLANNING TAMPICO PLANT.

The Metropolitan Petroleum Company is planning to construct a topping plant in the vicinity of Tampico.

ANOTHER BURK LINE COMPLETED.

The Interstate Oil & Refining Company's three inch pipe line from the refinery at Burkburnett to the Northwest Burkburnett oil field ,a distance of 5 1-2 miles, has been completed and is now running around 2500 barrels of crude a day.

SINCLAIR PARTY IN NORTH LOUISIANA

H. F. Sinclair, president of the Sinclair Consolidated Oil Company, headed a party which visited the oil fields of North Louisiana this week. The party reached Shreveport Sunday, and spent three days visiting the various fields where Sinclair holdings are. No member of the party would discuss the report current that a gathering system was to be built in North Louisiana with a large pipe line to a point on the Gulf.

The party included H. F. Sinclair, president of the corporation; his brother, E. W. Sinclair, president of the Exchange National Bank of Tulsa; George H. Flinn, president of Booth & Flinn, contractors, of New York, who is also a big stockholder of the Arkansas Natural Gas Company and a director of the Sinclair Corporation; C. A. Braley, vice president of the Sinclair Corporation, of Kansas City; A. E. Watts, vice president of the Sinclair Oil Company of New York; W. L. Connelly, vice president of the Sinclair Gulf Oil Company, of Houston; G. T. Stanford, of New York, a vice president of the Sinclair Oil Corporation; E. H. Chandler, general counsel, of Tulsa; J. V. McMahon, of Fort Worth, vice president of the Sinclair Gulf Company; J. R. Manion, general manager of the Sinclair Pipe lines; C. E. Crawley of Tulsa, vice president of the Sinclair Oil Corporation; C. A. Lockhard and Henry Tresch.

RESUME WORK ON WEST COLUMBIA LINE.

The Texas Pipe Line Company has resumed work on its eight-inch pipe line from a point on the Houston Ship Channel to the West Columbia field. About twenty miles of this line was laid several months ago when work was discontinued. The line will be completed by the end of the year and will have a daily capacity of around 20,000 barrels a day. The line will have a mileage of 55 miles. Much oil is now being stored at the field in earthen tanks.

CASING HEAD PLANT OPERATING

The Bradley Company has begun operation of its casing head gasoline plant in Block 74, Burkburnett extension. This company is building two 55,000 barrel storage tanks on its acreage in Blocks 81 and 90, and intends eventually to have 33 such tanks.

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Pleasant Grove Church Centers Big Production Area at Ranger

MOST of the heavy producers in the Ranger field for the past month have been in the western extension, and the Pleasant Grove Church lot, confroming to an old theory about church and cemetery property being the most valuable acreage in producing fields, is the centre of the big well district.

The Ranger field has gradually worked itself westward, and for some time the York Survey marked the western limit of production. Finally a well was completed on the Pleasant Grove Church lot, one mile west of the northwest corner of the York survey, and was followed by a 3,000 barrel well on the Eli Perkins by Root et al, west of the church lot, and since that time wells of the gusher class have completely surrounded the church and school lots.

One of the best leases in the vicinity of the Pleasant Grove church is the Calvin Perkins of the Gulf Production Company. No. 1 on this lease made 2500 barrels, No. 2 made 3000 barrels, No. 4 made 5000 barrels, and other tests are nearing completion that show for equally as much production, initial.

Big Holdings of Texas Company

On the east The Texas Co. has a 320 acre close up lease, with one 1500 barrel well, one 2500 barrel well, and other tests nearing completion. Still further to the east is the Boyd tract of the Texas Company, where one 4200 barrel well and another 3800 barrel producer have been completed.

Southeast from the church lot is a 120 acre lease of the Leon Oil Company, with two good wells producing on it, and directly south is two small leases, ten acres each, held by the Albers Oil Co. and — Barkley. One has a 1500 barrel well on it, and the other a 5000 barrel well, initial.

To the southwest is the 122 acres J. W. Turner lease of the Texas Company, at the corner of which is the 1000 barrel well of the Empire Gas & Fuel Company, on the Peeples. The Empire has 168 acres here. West of the church is the Poteet tract of Root, Hupp and Duff, with one 3000 and one 5000 barrel well, initial. North of the Gulf's Perkins, is the Brooks Heirs lease where the Ocean Oil & Refining Company and the Southwestern Petroleum Company have good production. The Ranger Rock Island Oil Co.'s No. 1 Wright to the east of the church was a 4000 barrel well at completion.

Four Miles Square

There is no other spot in the fields of West Texas where so many big wells have been completed, and they cover an area about 4 miles square. There have been no dry holes in this area. The acreage is owned by several companies, the Texas, the Gulf, the States Oil Corporation, Root, Hupp and Duff, the Leon Oil Co., and the Magnolia having the greater portion of it. There are nine small tracts, ranging from one acre to 43 acres, held by various independent companies. And they are all "setting pretty."

How far this district will spread is yet to be seen. It is well connected up with the main field to the east and southeast, but any extension west, southwest or northwest will be into virgin terriory.

EASTLAND CO.'S PLANT OPERATING

The new plant of the Eastland Oil & Refining Company in west Dallas, is operating the first unit of 4000 barrels a day, producing gasoline, kerosene, gas oil, distillates and fuel oil. Later a $350,000 lubricating plant will be installed.

The company is capitalized for $1,000,000, fully paid ,and has about 12,000 barrels a day production in the Burkburnett and Ranger fields. It also has valuable production acreage in the Ranger section.

The refinery of the company is one of the most modern in the country, having been constructed by the Wyatt Metal & Boiler Works of Dallas and the William Graver Company of Chicago. The company is laying a pipe line from its plant 2 miles west of Dallas, to the city to supply its trade with fuel oil, and has sold all it can produce of this commodity in advance. It owns 150 tank cars. The company has been paying 2 per cent a month to its stockholders for sometime.

Officers of the Eastland Oil & Refining Co. are as follows: R. B. Stichter, president; H. A. Kinnison, vice president; T. G. Hawkins, secretary; W. T. Henderson, treasurer, and H. L. Williford, general manager.

INCREASING CAPACITY OF THRALL REFINERY

The Thrall Oil Refining Company has recently completed arrangements for enlarging the daily capacity of the plant from 400 barrels to 1000 barrels, it being hoped to have the increased capacity effective about the first of the year. The plant started operation in 1916, and Burkburnett crude oil has been used mostly. No pipe line is operated, and the plant site consists of five acres.

BEAVER VALLEY WILL BUILD REFINERY

The Beaver Valley Oil & Refining Company is planning to construct a 5000 barrel plant in North Texas, probably in Fort Worth. The company owns production and acreage in the fields of North and West Texas.

PROTEST PROPOSAL TO POOL TANK CARS

Protesting against the proposal of pooling tank cars for the more expeditious movement of crude oil and refined products, the Western Petroleum Refiners Association in session in Tulsa last week was decidedly of the opinion that the refining companies can handle their own cars more expeditiously than the railroad administration could do.

The proposal to make tank cars common carriers originated in the congested areas of the Mid-Continent field, and was designed to facilitate the movement of oil, as a temporary measure. It has met with disapproval from practically all sources.

REFINING COMPANY FACES DAMAGE SUIT

Walker D. Hines and the G. C. & S. F. Railway Company have filed suit at Kansas City against the Producers Refining Company for $5,919,624, for alleged breach of contract, through the refining company's failure to furnish oil to the railroad under a term contract.

The action is based on a complaint that the railroad had contracted for 160,000 barrels of oil monthly at a stipulated price, and the refining company failed to make delivery of the oil necessitating the payment by the road of a higher price for its fuel.

The oil was to be furnished from the Gainesville, Texas, plant of the company and the contract was made June 5, 1918. It is claimed that the company complied with its agreement until June 14, 1918, and then refused to furnish the amount of oil contracted for.

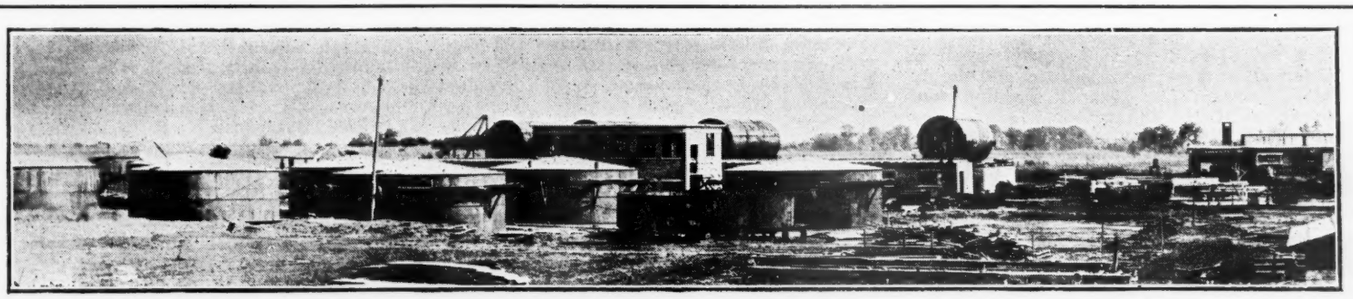
TYLER MAKING PERSONAL STUDY OF OIL FIELD TRANSPORTATION CONDI-

W. T. Tyler, chief of the operating division, Federal Railroad Administration, was in Austin this week in conference with the railroad commission regarding the congestion of traffic in the oil and grain producing sections of Texas, and left for a personal visit to Ranger, Eastland, Burkburnett and other Texas fields.

Explaining the causes for congestion, Mr. Tyler stated that the railroads were handicapped by not having the usual amount of new equipment to put into operation at this season of the year, and that their old rolling stock had not been kept in proper repair so that many cars are out of service on bad order notices. He said that more and faster trains in the oil country would not alleviate the congestion, as the single track roads are handling all the trains that they can now, and that their schedules could not be increased with any degree of safety.

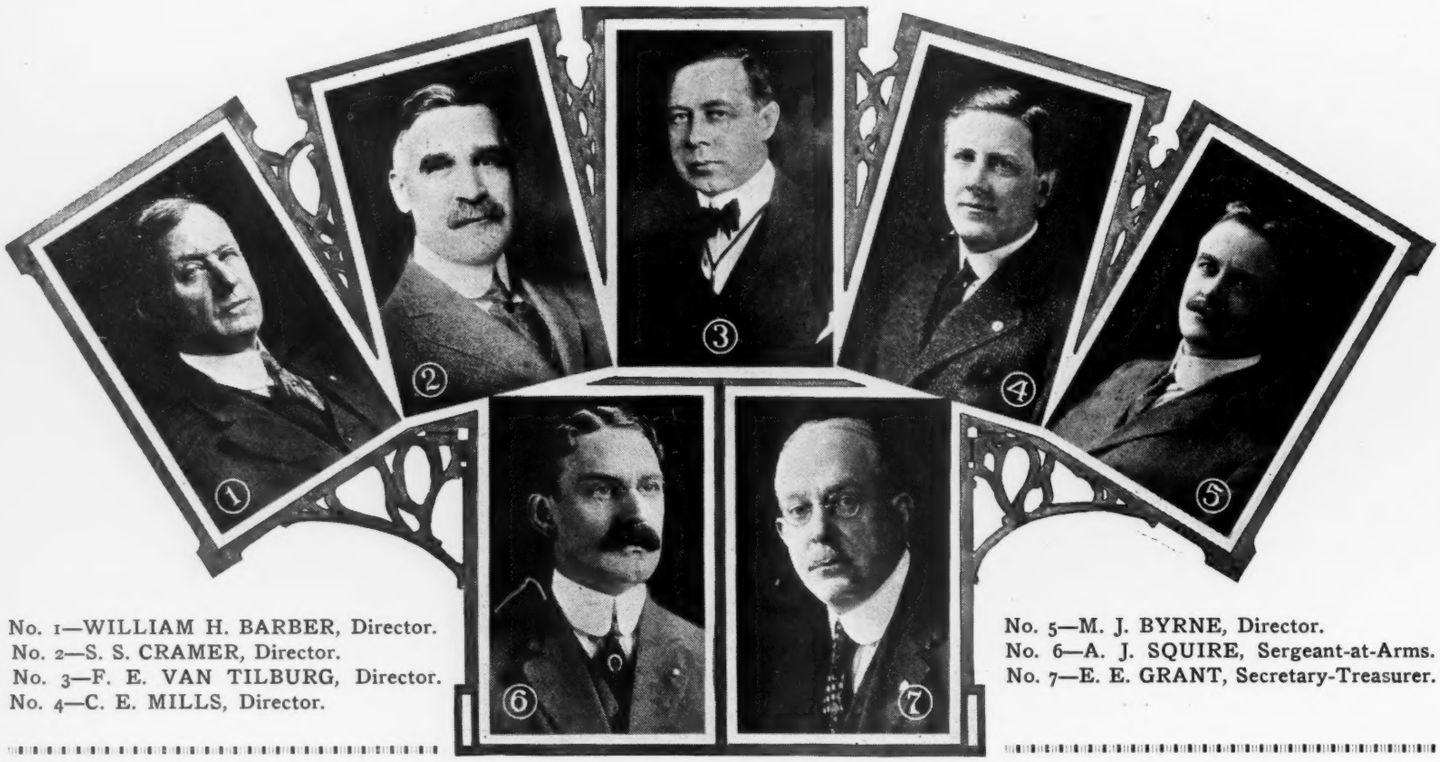
Ed Byers of the West Texas Chamber of Commerce appeared before the Railroad Commission, presenting additional testimony on the system of bribing, and recommended the appointment of a regional director to control all Texas lines.

The Railroad Commission now has all the data before it regarding the bribery practices in the oil fields.



A PARTIAL VIEW OF THE PLANT BEING ERECTED BY THE CROWN OIL AND REFINING COMPANY ON THE HOUSTON SHIP CHANNEL NEAR HOUSTON. IT IS EXPECTED THAT THE PLANT WILL BE IN FULL OPERATION BY THE FIRST OF THE YEAR. IT IS TO BE A COMPLETE REFINERY

Independent Oil Men to Gather in Chicago



No. 1—WILLIAM H. BARBER, Director.
No. 2—S. S. CRAMER, Director.
No. 3—F. E. VAN TILBURG, Director.
No. 4—C. E. MILLS, Director.
No. 5—M. J. BYRNE, Director.
No. 6—A. J. SQUIRE, Sergeant-at-Arms.
No. 7—E. E. GRANT, Secretary-Treasurer.

INDEPENDENT oil men from all sections of the nation will gather in Chicago next week to attend the eleventh annual convention of the Independent Oil Men's Association, which will convene October 21 for a three day session. The sessions will be held at the Congress Hotel.

The attention of the convention this year will be turned to the problems arising through the closing of the world war. Notable speakers, those particularly versed on subjects meaning much to the oil men, will occupy places on the program and it is expected that the attendance will be the largest in the history of the association.

Plenty of Entertainment.

Plenty of entertainment will be provided since all concede that oil men like to work, but they also like to relax and have a good time. And then they play just about as hard as they work. So times are expected to be rather lively in old Chicago between business sessions next week.

A most complete trade exhibit will be arranged at the Congress Hotel and the exhibit room will be open all the time with music to soothe the visitors. The annual banquet will be held in the Gold Room of the Congress Hotel Thursday night, there will be a golf tournament and there will be an elaborate dinner served at the South Shore Country Club, the delegates going to the club on a special train.

Officers and directors of the association are: G. I. Sweney, Bartles-Sweney Oil Co.; T. J. Gay, Gay Oil Co.; E. E. Grant, A. J. Squier, Warren Lubricant Co.; M. J. Byrne, Connecticut Oil Co.; S. S. Cramer, Wadhams Oil Co.; F. E. Van Tilburg, Van Tilburg Oil Co.; H. E. Mills, C. E. Mills Oil Co., and Wm. H. Barber, W. G. Barber Agency Co.

Mining Congress to Meet.

Sessions of the twenty-second convention of the American Mining Congress, National Gold Conference and War Minerals Producers Congress will be held October 17-22 at Chicago, the Planters Hotel being headquarters.

Program for Convention.

Registrations will be entered in secretary's office, rear of Elizabethan Room, ground floor Congress Hotel. Morning sessions will be held in Francis I Room, Mezzanine floor, opening at ten o'clock and closing at 12:30. Luncheon will be served Tuesday and Wednesday in Gold Room at 1 o'clock. Registration for ladies will be entered on Mezzanine floor and fee will be five dollars.
of Albert J. Squier, vice-president Warren Lubricant Co., New York, sergeant-at-arms.

Tuesday, Oct. 21.

Morning Session—10:00 a. m., "A Recognized Code of Copper Business Practices," President Sweney presiding. Speakers—A. J. Callaghan, Jackson, Mich., president American Oil Corp.; T. B. Westgate, Titusville, Pa., president American Oil Works; Louis McNally, Milwaukee, Wis., secretary Wadhams Oil Co.; Sheldon Clark, Chicago, Ill., Sinclair Refining Co.; F. E. Van Tilburg, Minneapolis, Minn., president Van Tilburg Oil Co.; Hugh A. Quinn, Boston, Mass., president National Oil Works; G. T. Wofford, Birmingham, Ala., president G. T. Wofford Oil Co.; P. C. Crenshaw, Chicago, Ill., president, Home Oil Co.

General Discussion — 1:00-3:30 p. m. Luncheon in Gold Room, President Sweney presiding. Speakers—Frank O. Lowden, Governor of Illinois; Percival G. Rennick, Peoria, Ill.; Richard Walterman, Washington, D. C., secretary Railroad Committee, Chamber of Commerce; A. C. Ande, Chicago, Ill., vice-president and general manager Garden City Oil Co.; Benson's Novelty Orchestra, Miss Olga Kargau, Soloist.

Adjournment.

3:30-5:30 p. m.—Elizabethan Exhibition Room, Benson's Novelty Orchestra.

8:15 p. m. Gold Room Congress Hotel, "A Night in the Orient," refreshments, dancing.

Wednesday, Oct. 22.

Morning Session—10:00 a. m. Joint meeting United States Oil Inspectors' Ass'n., and the Independent Oil Men's Association; C. D. Chamberlin, chairman, secretary and general counsel National Petroleum Association, Cleveland, Ohio.

Speakers—Jas. Duce, Denver, Colo., president U. S. Oil Inspectors' Association; E. R. Harpers, Denver, Colo., efficiency and budget commissioner of Colorado; W. C. Ballard, Helena, Montana, state oil inspector of Montana; M. J. Byrne, Waterbury, Conn., president Connecticut Oil Co.; B. S. Paulen, Fredonia, Kans., state oil inspector of Kansas; O. H. Williams, Kansas City, Mo., president Mutual Oil Co.; L. V. Nichols, Omaha, Neb., president L. V. Nichols Oil Co.; Geo. F. Fox, New York City, sales manager Indiana Refining Co.

General Discussion — 1:30-3:30 p. m. Luncheon in Gold Room, President Sweney presiding. Speakers—Hon. E. R. Harper, Denver, Colo.; H. M. Byllesby, Chicago, Ill., H. M. Byllesby Co.; R. L. Walsh, New York, secretary and general counsel American Petroleum Institute; Pat Malloy, Tulsa, Okla., president Western Petroleum Refiners' Association; Royal Hawaiian Orchestra in native costume; Princess Eulalie, Hawaiian melodies.

Adjournment.

3:30-5:30 p. m., Elizabethan exhibition room, Royal Hawaiian Orchestra.

6:30 p. m., Banquet in Gold Room, Congress Hotel, toastmaster, President Sweney.

Speakers—Colonel R. W. Stewart, Chicago, chairman board of directors Stand-

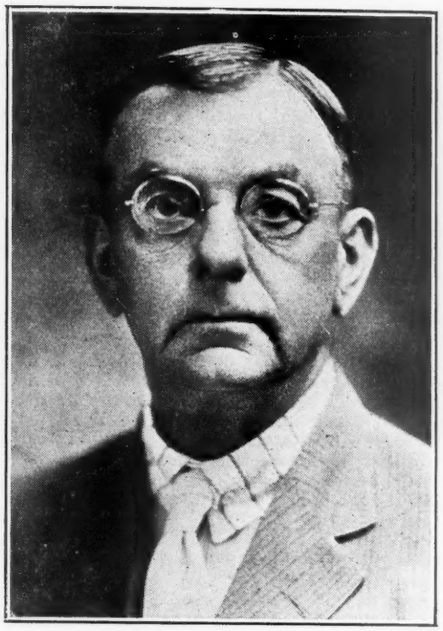
W. B. Corlett Is "Only Original" Oil Lease Man in North Texas

W. B. CORLETT, head of the land and lease department of The Texas Company at Wichita Falls, is the "only original" pioneer oil lease man in North Texas. He was the first man in the field and has been present at the bringing in of every pool in the section.

In 1895 he came to Texas from Iowa, settling near Henrietta, where he farmed for some time and afterward went into the real estate business. In 1905 he joined the lease department of the Corsicana Petroleum Company, now the Magnolia. Two years later he became the North Texas man for the Texas Company, and has been in charge of the district for that company ever since.

He was working for the Texas Company when the first oil was found in the Petrolia district in a water well 240 feet deep. Since that time he has seen the Electra field, Burkburnett, Burk-Waggoner, Iawo Park, Holliday, Clara, Sunshine Hill, Eastland, Stephens County and other oil fields brought in in his district. His department grew until at one time he had 20 men under him in the field, and now that the district has been divided because of the important developments, still has 10 scouts under his direction.

On the first discovery of oil at Ranger he was on the ground and within a few days had assembled between five and six thousand acres of leases, all of which have since been proven oil lands. He paid from $3 to $150 an acre for this land. Any "ready reckoner" who likes a pencil and figures can play with the sums these lands have since represented.



W. B. CORLETT

ard Oil Co. of Indiana; Hon. Oliver H. Shoup, Denver, Colo., Governor of Colorado; Major General Leonard Wood, Chicago, United States Army; Symphony Orchestra, Jerome Levy, director.

Thursday, Oct. 23.

Morning Session—10:00 a. m., Annual business meeting Independent Oil Men's Association, President Sweney presiding; Reading of minutes of previous meeting, report of secretary, report of treasurer, report of traffic manager, election of officers and directors and new business.

Buffet Luncheon.

2:00 p. m., Open meeting for jobbers and marketers. Report on marketing conditions throughout United States. Opportunity for presenting various problems.

3:30-5:30 p. m., Elizabethan Exhibition Room, novelty jazz orchestra, Miss Marie Rossi, soloist.

6:30 p. m., Assemble hotel lobby and proceed to Van Buren street station of Illinois Central railroad. Take special train for South Shore Country Club.

7:30 p. m., Dinner dance, South Shore Country Club; Graf's orchestra and Royal Guatamala Marimba Band, Grace McDonnell, premier danseuse. Trains leave South Shore Country Club station for city at frequent intervals.

Special.

10:00 a. m., Oil Inspectors invited to visit refineries of Sinclair Consolidated Refining Company at East Chicago, Indiana, automobiles provided.

Golf tournament, links of Evanston Golf Club, beginning 10:00 a. m., automobiles provided to take parties to the course. All jobbers, refiners and supply men attending convention eligible. Prizes.

Entertainment for Ladies.

Tuesday, October 21—Albert J. Squier, sergenat-at-arms.

12:00 m., Guests will gather on Mezzanine floor and proceed to Blackstone Hotel for luncheon at 1 o'clock.

8:15 p. m., Gold Room Congress Hotel, "A Night in the Orient," refreshments, dancing.

Wednesday, October 22—2:00 p. m., Theatre party, "Take it From Me," Studebaker Theatre.

6:30 p. m., Banquet in Gold Room Congress Hotel; toastmaster, President Sweney; dancing.

Thursday, October 23—12:00 m., Assemble Mezzanine floor and proceed to Evanston Gold Club for luncheon at 1 o'clock. Automobiles provided.

6:30 p. m., Assemble hotel lobby and proceed to Van Buren street station of Illinois Central railroad. Take special train for South Shore Country Club.

7:30 p. m., Dinner dance—South Shore Country Club. Trains leave South Shore Country Club station for city at frequent intervals.

TO THE POINT

Major—My boy, what do you intend to do when you get out of the army?

Private—Stay out, sir!

STUDYING SALT WATER PROBLEMS

One of the first problems to be taken up by A. A. Hammer of the Bureau of Mines, who has opened an office at Wichita Falls, will be that of fighting salt water at the Burkburnett fields. A number of wells in different parts of the field are troubled with salt water.

Among these wells are the following: Southern Oil Corporation, No. 1 Evans, block 31 Greenwood subdivision, which found a water sand at 1660 feet. This well was drilled through the sand and is now fishing at 1735 feet.

The Stronghold Oil Co.'s No. 1 Taylor, block 17, Knight subdivision, found salt water at about 1690 feet, and is now trying to shut it off with wooden plugs.

The Tennessee Oil Company (No. 1), in its No. 1 J. B. Evans is trying to pull back from 1670 feet in an effort to shut off water.

The Charles E. Ertz Oil Company found salt water on the W. F. George tract at 1650 feet.

The Franklin Drilling Company is trying to plug three feet off the bottom of its No. 1 A. A. Morgan, at a depth of 1650 feet, in an effort to shut off water.

The Pennsylvania Oil & Gas Company (No. 1) is pulling casing to abandon its No. 1 Michna on account of salt water at 1670 feet.

Painter & Fenton et al are swabbing oil and water in their well on the same tract, and are trying to plug back to 1655 feet.

The Sinclair Consolidated Oil Company has apparently exhausted the water found in No. 1 L. Morgan well in the Meadows survey. This well is now flowing by heads.

In the Taylor tract, block 96, the Falcon Oil Company is trying to shut off water at 1700 feet, by running a 5 3-16 inch casing with a packer.

The Mississippi Burk Oil Company is trying to shut off water from its No. 2 Brannon, in block 95. This water was found at about 1720 feet.

The Sinclair Consolidated Oil Company found water in No. 1 Brannon well, block 89, at 1750 feet.

BANKERS VISIT OIL FIELDS

A party of thirty bankers and business men, most of whom were from Detroit, were in Wichita Falls last week as guests of the Charles F. Noble Oil Company, inspecting the Burkburnett oil fields.

FROM BUGS TO OIL

Ed L. Ayers, who resigned as chief inspector of orchards and nurseries for the state of Texas to enter private business, has gratified his desire of two years ago to get in the oil game and is now treasurer of the Bor-Tex Oil Company of Laredo, Texas. More than two years ago Ayers made extensive experiments with crude oil which he used successfully on orchards infected with scales of various kinds as well as bugs and worms affecting crops. During these experiments he visited the different fields to secure oil of various gravities. While in the field he was attacked by a bug new to him. It was known as the Oil Bug. Its only cure is to get into the oil game and Ayers, as usual, got there.

PEDEN RESIGNS AS FOOD ADMINISTRATOR

E. A. Peden of Houston, president of the Peden Iron & Steel Company, and well known throughout the oil producing sections of the Southwest, has resigned as state food administrator. Mr. Peden was appointed to this position in 1917, and had control of the food situation in Texas during the war.

NEW OFFICERS FOR CADDO CENTRAL

Major Lawrence B. Dunham of New York has been elected vice president of the Caddo Central Oil & Refining Company of Shreveport, La., and he will have charge of the affairs of the company in the East. The addition to the Shreveport plant is progressing.

Development Going Southwest for Probable Extension of Ranger Field

EXTENSIONS of the Ranger field to the west and northwest have held the center of the stage in that district for the past six months, and little attention has been paid to possible production to the southwest, in the territory south of the town of Eastland.

This section was largely condemned by the No. 1 Connellee of the Transcontinental Oil Company, which was completed for a 20 barrel well at 3216 feet. Five miles east of the Connellee tract is the Brewer Hill development of the Texas & Pacific Coal & Oil Company, and the Merriman church and school lot wells. South from these districts there is nothing of importance till you reach the Desdemona field or the Sipe Springs country.

Recently, however, the Connellee well of the Transcontinental has been "coming in," and its flow is now estimated at 250 barrels a day. It has gradually increased its production until it is of vast importance, and adds a new angle to the southwest Ranger field. The territory is no longer condemned, but plans are being made to more thoroughly test it out, and it is believed altogether possible that an extension of importance will be added in this district directly south of Eastland.

The Cosden Oil & Gas Company has a test on the Barber, offsetting the Connellee lease, that drilled to 3716 feet without getting anything worth while. It is plugging back to 3295 feet for a shot, as it had a sand at this depth.

The town of Eastland is coming into more importance daily as a center of development. The Big Well district in the western Ranger field is already nearer Eastland than it is to Ranger, and the Olden district is also nearer Eastland than any other town. If the territory south of the town should spring a big extension, Eastland will have valuable production on three sides, and will be "sitting pretty."

The town of Eastland is as congested now as Ranger was in her halcyon days. Although a larger town originally, and able to take better care of the congested population and congested business, Eastland presents the appearance now of a big work camp, and there is little to remind one of the original "town" except the county court house and a typical Southern "square" around it.

PRODUCTION AT RANGER

The average daily production in the Ranger field the past week is divided about as follows:

	Barrels
Gulf Production Co.	6,250
Magnolia Petroleum Co.	3,593
Prairie Oil & Gas Co.	6,629
Texas Company	3,752
Texas & Pacific	10,462
Mid-Kansas Oil & Gas Co.	440
Sun Company	1,759
Sinclair Gulf Oil Co.	1,930
Humble Oil & Refining Co.	2,710
Miscellaneous	32,630
Total	70,155
Last week	66,850

LATE COMPLETIONS IN THE RANGER FIELD

Texas & Pacific Coal & Oil Co.'s No. 1 W. E. McCleskey is completed for a small pumper at 3380 feet; No. 5 is making 90 barrels at 3326 feet; No. 9 Hand is completed for a pumper at 3305 feet; No. 3 Clemmer is a 400 barrel well at 3318 feet; No. 13 Norwood is making 1200 barrels at 3445 feet; No. 1 C. E. Terrell is showing 1250 barrels at 3400 feet.

Prairie Oil & Gas Co.'s No. 1 Terrell is a 1200 barrel well at 3400 feet; No. 6 Terry is completed for a pumper at 3454 feet; No. 1 Cotton is a 100 barrel well at 3438 feet.

Magnolia Petroleum Co.'s No. 4 Connellee is a 500 barrel well at 3422 feet; No. 12 Rock is dry at 3580 feet; No. 5 Harris is a 75 barrel well at 3465 feet.

Texas Company's No. 5 Boyd is a 750 barrel well at 3490 feet; No. 5 Littleton is making 1500 barrels at 3510 feet.

Mid-Kansas Oil & Gas Co.'s No. 11 Layne is completed for 100 barrels at 3484 feet, and No. 1 is on the pump at 3493 feet.

Sinclair Gulf Oil Co.'s No. 5 Harpool is completed for 50 barrels at 3250 feet; No. 5 Barnes is a 300 barrel well at 3343 feet; No. 1 McGlothlin is dry at 3483 feet.

Tidal Oil Co.'s No. 4 Danley is a 600 barrel well at 3302 feet.

Leon Oil Co.'s No. 3 Allen is making 1000 barrels at 3500 feet.

Tulsa Producing & Refining Co.'s No. 1 Sue is a 50 barrel well after three shots of nitro, with a total depth of 3335 feet.

Good Oil Co.'s No. 1 Sue is completed for 600 barrels at 3520 feet.

Skelley & Sankey's No. 1 Scott is completed for 60 barrels at 3260 feet.

Prairie Oil & Gas Co.'s No. 11 Roper is making 100 barrels at 3440 feet.

Sun Company's No. 2 Maynard is a 700 barrel well at 3534 feet.

Albers Oil Co.'s No. 2 Turner is making 200 barrels at 3340 feet.

States Oil Corp.'s No. 1 Barber is making 400 barrels at 3436 feet.

Stanton Oil Co.'s No. 1 Sudderth is making 80 barrels at 3420 feet.

Cosden Oil & Gas Co.'s No. 1 Barker, south of Eastland, is preparing to shoot at 3295 feet, and was drilled to 3745 feet.

Texas & Pacific Coal & Oil Co.'s No. 14 Norwood is making 300 barrels at 3258 feet.

WELLS NEAR COMPLETION

Texas & Pacific Coal & Oil Co.'s No. 8 W. E. McCleskey is showing oil from the shallow sand at 1740 feet.

Prairie Oil & Gas Co.'s No. 5 Terry is rigging to pump at 3454 feet.

Thraves et al's No. 1 Corner School lot is making 40 million feet of gas at 1785 feet.

Caldwell Oil Co.'s No. 1 Simer is swabbing 50 barrels and repairing the rig.

Sun Company's No. 7 Rust has the sand at 3450 feet, and is swabbing.

Gulf Production Co.'s No. 9 Collett is showing oil and gas at 3410 feet; No. 6 Barnes is setting casing, after a shot of 270 quarts, at 3352-3455 feet.

RANGER WELLS BELOW 3000 FEET.

Texas & Pacific Coal & Oil Co.'s No. 1 Mancell, shut down 3305 feet; No. 9 W. E. McCleskey, drilling 3292 feet; No. 2 Beidleman, shut down 3465 feet; No. 1 Cook, shut down for company tools 4356 feet; No. 9 Butler, fishing 3420 feet; No. 11 Butler, drilling 3180 feet; No. 15 Norwood, drilling 3310 feet; No. 3 Hagaman, cleaning after shot 3540 feet; No. 4 Hagaman, shut down for fuel 3242 feet; No. 1 Erwin, drilling 3210 feet; No. 3 Meyers, drilling 3290 feet; No. 1 Meadows, waiting on fishing tools 3257 feet.

Prairie Oil & Gas Co.'s No. 2 Howard, waiting on fishing tools 3535 feet; No. 3 Howard, shut down 3362 feet; No. 5 Howard, shut down 3348 feet; No. 2 Johnson, fishing 3189 feet; No. 8 Ida Slayden, set casing 3225 feet; No. 3-A Christmas, shut down 3240 feet; No. 1 Whitson, preparing to make a shot 3820 feet; No. 6 E. Roper, drilling 3255 feet; No. 9 Roper, drilling 3255 feet; No. 11 Roper, drilling 3245 feet; No. 13 Roper, drilling 3245 feet; No. 16 Roper, 3125 feet; No. 20 Roper, drilling 3235 feet; No. 6 J. T. Roper, drilling 3244 feet; No. 8 J. T. Roper, has collapsed casing at 3334 feet; No. 2 Cunningham, drilling 3460 feet; No. 1 Danley, drilling 3130 feet.

Humble Oil & Refining Co.'s No. 2 Scott, fishing 3376 feet; No. 4 Fargason, drilling 3310 feet; No. 4 Patton, trying to sidetrack casing 3280 feet; No. 5 Patton, setting casing 3218 feet; No. 4 Davis, pulling outside casing 3354 feet; No. 1 States Land, drilling 3065 feet.

Gladstone Oil & Refining Co.'s No. 4 Barton, shut down 3298 feet.

Lone Star Gas Co.'s No. 1 Hagaman, shut down 3740 feet.

Magnolia Petroleum Co.'s No. 9 Rock, pulling casing 3550 feet; No. 4 Connellee, drilling 3330 feet; No. 3 Harris, crooked hole 3300 feet; No. 4 Davis, drilling 3380 feet; No. 2 Walker, fishing 3365 feet.

Root et al.'s No. 3 Poteet, drilling 3065 feet; No. 1 Perkins, crooked hole 3480 feet; No. 2 Perkins, setting casing 3325 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Taylor, drilling 3250 feet; No. 8 Layne, drilling 3250 feet; No. 2 Rush, setting casing 3135 feet; No. 4 Wagner et al., drilling 3215 feet.

Westheimer Oil & Gas Co.'s No. 2 Griffin, fishing for tools 3333 feet; No. 3 Griffin, jarring on casing 3370 feet.

Sinclair Gulf Oil Co.'s No. 1 Harpool, fishing 3493 feet; No. 3 Harpool, drilling 3315 feet; No. 6 Harpool, pulling casing 3370 feet; No. 2 Thompson, shut down for crew 3338 feet; No. 2 De Moss, waiting on sand line 3430 feet; No. 1 Hagaman, pulling casing 3780 feet; No. 4 Hagaman, cleaning out 3456 feet; No. 1 Barnes, preparing to run friction socket 3580 feet; No. 3 Barnes, cleaning out after shot 3430 feet; No. 2 Davis, fishing 3040 feet; No. 3 Danley, drilling 3310 feet.

John Markham's No. 12 Copeland, drilling by tools at 3505 feet; No. 15 Copeland, setting packer 3713 feet; No. 16 Copeland, shut down for company tools 3560 feet; No. 19 Copeland, drilling 3635 feet.

McKinsey et al.'s No. 2 Griffin, shut down 3361 feet.

Gilliland et al.'s No. 1 Bullock School Lot, waiting on company tools 3435 feet.

Imperial Oil & Dev. Co.'s No. 1 Parrish, cleaning out 3324 feet.

Dorsey et al.'s No. 10 Harrison, drilling 3230 feet.

Chapman et al.'s No. 2 Wright, shut down 3282 feet.

Eclipse Oil Co.'s No. 2 Cotton, setting casing 3270 feet.

Gillispie et al.'s No. 1 Cotton, shut down 3430 feet.

Jake Hamon's No. 1 Hamilton, building new rig 3420 feet.

Leon Oil Co.'s No. 2 Allen, fishing 3310 feet; No. 8 Allen, underreaming 3280 feet.

Tex-Rickard's No. 1 Moss, cleaning out 3610 feet.

Albers Oil Co.'s No. 2 Turner, fishing 3330 feet.

Producers Oil & Refining Co.'s No. 1 Cotton, shut down for shot 3520 feet.

Tex-Rickard's No. 2 Barker, drilling 3310 feet.

Caldwell Oil & Gas Co.'s No. 1 Lafferty,

shut down for repairs 3000 feet.

Steiner Oil Co.'s No. 1 Butler, drilling 3270 feet.

Phillips Petroleum Co.'s No. 1 Dawson, trying to pull casing 3720 feet.

Maco & Ford's No. 1 Pleasant Grove School, underreaming 3360 feet.

Stanton Oil Co.'s No. 1 Baptist Church, 3330 feet.

Root, Huff & Duff's No. 1 Connellee, preparing to shoot 3887 feet.

Air-Tex Oil Co.'s No. 1 Olden School Lot, shut down 3612 feet.

Ranger Cisco Oil Co.'s No. 1 Miller, drilling 3215 feet.

McCorty et al.'s No. 1 Sue, fishing 3370 feet.

Porter Wertz Oil Syn.'s No. 3 Perkins, pulling casing 3330 feet; No. 4 Perkins, pulling casing 3345 feet.

Ranger Central Oil Co.'s No. 1 Brook Heirs, drilling 3350 feet.

Ardizonne et al.'s No. 1 Kincaid, preparing to shoot 3510 feet.

Great Southern Oil Co.'s No. 1 Baumgartner, trying to drill past tools 3505 feet.

Sun Company's No. 9 Rust, shut down 3312 feet; No. 3 Lauderdale, drilling 3420 feet; No. 4 Lauderdale, drilling 3280 feet; No. 1 Sudderth, shut down 3506 feet; No. 1 Maynard, swedging casing 3328 feet; No. 2 Maynard, drilling 3464 feet.

Gulf Production Co.'s No. 3 Rowland, shut down 3355 feet; No. 4 Taylor, waiting for fishing tools; No. 4 State Collett, shut down for fishing tools, 3300 feet; No. 1 Ray, drilling 3515 feet; No. 1 Gholson, pulling casing 3490 feet; No. 5 Barnes, waiting for shot 3700 feet; No. 7 Barnes, resetting casing 3490 feet; No. 2 Parton shut down for tools; 3455 feet; No. 4 Parton, shut down 3280 feet.

OTHER WELLS AT RANGER.

Texas & Pacific Coal & Oil Co.'s No. 2 Mancill, drilling 1970 feet; No. 4 Hodges, shut down 1920 feet; No. 5 Hodges, lost hole will skid rig 2570 feet; No. 3 Beidleman, drilling 1975 feet; No. 1 Pool, drilling up bailer, 2085 feet; No. 13 Butler, drilling 1570 feet; No. 15 Butler, 640 feet; No. 18 Butler, drilling 1900 feet; No. 19 Butler, drilling 830 feet; No. 20 Butler, drilling 350 feet; No. 3 Norwood, drilling 2000 feet; No. 4 Norwood, drilling up underreaming lugs 1975 feet; No. 5 Norwood, drilling 2025 feet; No. 11 Norwood, drilling 1650 feet; No. 12 Norwood, drilling 1810 feet; No. 16 Norwood, drilling 2450 feet; No. 18 Norwood, drilling 2500 feet; No. 22 Norwood, drilling 630 feet; No. 2 Williams, drilling 1860 feet; No. 2 Galloway, drilling 1760 feet.

Prairie Oil & Gas Co.'s No. 4 Howard, drilling 1025 feet; No. 7 Woods, drilling 2520 feet; No. 15 Terrell, drilling 2545 feet; No. 3 Brewer, drilling 2620 feet; No. 5-A Christmas, fishing 1470 feet; No. 2 Danley, drilling 2420 feet; No. 3 Danley, drilling 1025 feet; No. 15 E. Roper, drilling 1670 feet; No. 17 Roper, fishing 695 feet; No. 18 Roper, fishing 780 feet; No. 4 J. T. Roper, drilling 1160 feet; No. 7 Roper, drilling 830 feet; No. 1-A Madding, drilling 2630 feet; No. 2-A Madding, drilling 175 feet; No. 1-B Madding, drilling 1690 feet; No. 3 Cunningham, drilling 410 feet; No. 2 Danley, drilling 1860 feet; No. 2 Cotton, drilling 1530 feet; No. 1 Crabb, drilling 2200 feet; No. 2 Crabb, drilling 2245 feet; No. 1 Meadows, drilling 1995 feet; No. 2 Meadows, drilling 1475 feet; No. 3 Meadows, drilling 500 feet.

Humble Oil & Refining Co.'s No. 5 Fargason, drilling 1760 feet; No. 2 McCord, shut down 2250 feet; No. 2 States Land, drilling 710 feet; No. 5 States Land, drilling 1330 feet.

Gladstone Oil & Refining Co.'s No. 2 Wright, drilling 1040 feet.

Magnolia Petroleum Co.'s No. 10 Rock, drilling 2800 feet; No. 11 Rock, underreaming 2300 feet; No. 8 Connellee, drilling 2989 feet; No. 9 Connellee, drilling 450 feet; No. 14 Connellee, drilling 175 feet; No. 2 Oscar Harris, drilling 175 feet; No. 3 Davis, drilling 350

(Continued on Page 42.)

1900 Drilling Wells, Rigs and Locations in Central West Texas

THERE are 1900 wells, rigs and location in the Central West Texas territory, 1500 of them being in the three main fields of Eastland, Stephens, and Eastland-Erath-Comanche county sections. There are fifty counties in the Central West Texas territory, outside of the three big sections, where drilling is under way on a scale that will adequately test the possibilities for oil and gas. This district covers an area of about 30,000 square miles.

These figures are partly exact counts, and partly estimates. On the Eastland and Stephens county developments, the figures represent exact counts of the wells, rigs and locations. On the outlying districts they are not exact counts, but are estimates based upon an average of several of the best available files of information, and may be regarded as very conservative.

This territory does not embrace the North Texas district, being separated from North Texas by a line following the north line of Parker, Palo Pinto, Stephens and Shackleford counties. There are several counties in the extreme western part of the state where rigs and locations have been reported that are not included in the estimate, and the figures are made to cover only the district where actual drilling is under way, and on a scale that will test the territory.

500 Wildcat Wells.

Outside the fields of Eastland and Stephens counties, this leaves 400 wells drilling in what may be termed wildcat territory. These tests are more expensive than wells drilling in proven area, and a conservative estimate will place the total expenditure for these 400 wells at $20,000,000, provided they are all drilled to completion. This represents one of the largest amounts of money ever expended in a search for new oil pools.

Figuring the average cost of wells in the deep fields of West Texas at $40,000 each, a low minimum according to past experience, the wells now drilling, together with the rigs and locations for tests, represent an expenditure of $76,000,000.

It takes 2 to 5 months to complete the deep wells in the West Texas territory. In the Desdemona field where drilling is easy, wells are completed in 35 to 45 days, but this is an exceptional field. A good average time for the completion of tests is 75 days in a known field, and 90 days and up in wildcat territory. Giving them the maximum of time for completion, say three months to the well, the same string of tools can drill four wells a year. This would mean four times the amount given above would be expended annually in drilling for oil ,or a total annual outlay of $304,000,000. And of course the drilling of wells is only one of the expenses of oil field development.

Drilling Campaign is On.

That the drilling campaign in West Texas is only getting under fair way is indicated in the recent action of several of the major producing companies in placing orders for steel and wood that are almost staggering in their proportions. Three companies ordered timbers for 1500 derricks for Eastland and Stephens counties. Other orders, and other company plans are in proportion.

Stephens county has more wells, rigs, and locations than any other field, although the combined operations in the Ranger section, and around Desdemona ,all of which is in Eastland county, would put this county in the lead. Stephens has 700 tests under way, or ready to start when materials can be made available.

Will They Pay Out?

The average daily production for all the fields of West Texas has been around 130,000 barrels a day for several weeks. It is gradually rising, month by month. This places the production of the field at about 4,000,000 barrels a month, worth $9,000,000. For the three months hypothetical period taken as the time required to complete the 1900 wells now drilling or ready to drill, therefore, the present income from oil at the production level of today would be only $27,000,000.

It must be remembered, however ,that the drilling programs in West Texas are out of all proportion now to what they were three or six months ago, or say at the time when the wells, which are now producing $9,000,000 worth of oil each month, were started. There are, roughly, 700 commercially productive—wells in West Texas at the present time. It is also shown by statistics that about 68 per cent of the wells drilled in this district are commercially productive. At this rate, the wells now drilling or ready to drill, when completed, will add about 1250 wells to the productive list, adding about 170 per cent to the production of the field. This is on the hypothesis, of course that the wells now flowing will maintain their flow for the next Most of them will be producing three months from now, however, and if past records are maintained they will be making considerably more than half of what they are today.

A Typical Well.

Take the case another way: take a typical well, an average well in the Ranger field. And the Ranger field may be regarded as a fairly average field, between Desdemona where the wells decline remarkably fast, and Stephens county, where the wells hold up remarkably well.

An average well in the Ranger field therefore may be taken as a fair type of what the West Texas fields will do.

Of all wells completed at Ranger to the present, the average initial production has been just a little above 600 barrels, Figuring the decline of wells in the whole field, from flush production to their present settled flow, it is found that they fall off 14 per cent a month. As a matter of fact the wells that have ended their lives in this field had made better records than this, and the high percentage is made by the decline of wells from flush production, and is maintained by the large number of new wells each month that have to be figured into the case in making an average for the whole field.

A Paying Field.

Take then these averages, seen at a glance to be too conservative, and say that each well completed will make 600 barrels initial, and decline 14 per cent a month. Its production by months will be about as follows:

16,480 barrels first month.
12,960 barrels second month.
10,440 barrels third month.
8,020 barrels fourth month.
5,400 barrels fifth month.
2,880 barrels sixth month.
360 barrels seventh month.

56,540 barrels, total.

Thus if the average, the only average yet available because of the newness of the field, was absolutely true, the wells would make a total average production of 56,540 barrels. At the posted price of crude this would make each well worth $127,215, from the oil it actually produces. In experience it is believed that the value of the average Ranger field well is more than this, but this is a rock bottom basis upon which it is perfectly safe to make estimates.

With 68 per cent of the wells in West Texas commercially productive, and the average cost of drilling at $40,000, it is easy to see that it is a paying field.

feet; No. 1 Turner, drilling 2600 feet; No. 2 Turner, drilling 2000 feet; No. 1 McCord, drilling 2000 feet.

Root et al.'s No. 5 Poteet, drilling 2250 feet; No. 6 Poteet, drilling 600 feet; No. 7 Poteet, drilling 430 feet; No. 11 Poteet, drilling 470 feet; No. 3 Perkins, drilling 2120 feet; No. 4 Perkins, drilling 175 feet; No. 1 Bond, drilling 1830 feet.

Wagner et al.'s No. 5 D. McCleskey, shut down 1800 feet.

Texas Company's No. 2 Stanley, drilling 2250 feet; No. 3 Stanley, drilling 175 feet; No. 4 Stanley, drilling 1045 feet; No. 3 Boyd, shut down for water, 2390 feet; No. 6 Boyd, shut down for water 335 feet; No. 7 Boyd, shut down 455 feet; No. 8 Boyd, shut down for water 740 feet; No. 1 Littleton, shut down for water 400 feet; No. 6 Littleton, shut down for water 1190 feet; No. 7 Littleton, shut down 827 feet; No. 9 Littleton, drilling 175 feet; No. 1 Turner, fishing 2080 feet; No. 2 Turner, shut down for water 300 feet.

Mid-Kansas Oil & Gas Co.'s No. 3 Griffin, shut down 850 feet; No. 6 Wagner et al., drilling 650 feet.

Maxwell et al.'s No. 1 Miller, shut down 450 feet.

Sinclair Gulf Oil Co.'s No. 4 Davis, shut down 1705 feet; No. 1 Barnes, cutting wire line 2450 feet; No. 2 Barnes, shut down 850 feet; No. 4 Danley, drilling 2000 feet; No. 5 Danley, drilling 1140 feet; No. 7 Danley, drilling 175 feet.

John Markham's No. 20 Copeland, drilling 500 feet; No. 21 Copeland, drilling 2400 feet.

Dorsey et al.'s No. 11 Harrison, drilling 2930 feet; No. 12 Harrison, drilling 1625 feet.

Chapman et al.'s No. 2 Sue, drilling 175 feet; No. 3 Sue, drilling 175 feet.

Eclipse Oil Co.'s No. 3 Cotton, drilling 2910 feet; No. 4 Cotton, drilling 450 feet; No. 2 Fargason, drilling 1025 feet.

Gillispie et al.'s No. 2 Cotton, drilling 900 feet; No. 3 Cotton, drilling 1940 feet.

Jake Hamon's No. 4 Hamilton, drilling 2000 feet.

Ranger Rock Island Oil Co.'s No. 2 Wright, drilling 980 feet.

Ross et al.'s No. 1 Hawk, drilling 1280 feet.

States Oil Corp.'s No. 1 Sumrell, shut down 2180 feet; No. 1 Earnest, drilling 2890 feet; No. 1 Harbin, drilling 2370 feet; No. 1 Loper, drilling 1380 feet; No. 1 Niver, drilling 950 feet; No. 1 Peel, drilling 940 feet.

Gates Oil Co.'s No. 2 Barker, drilling 2500 feet.

Tidal Oil Co.'s No. 5 Danley, drilling 1100 feet.

Leon Oil Co.'s No. 9 Allen, drilling 175 feet; No. 12 Allen, drilling 640 feet; No. 13 Allen, drilling 175 feet.

Tex-Rickard's No. 2 Moss, drilling 2920 feet.

Albers Oil Co.'s No. 3 Turner, drilling 1320 feet; No. 1 Brown, shut down 1200 feet.

R. O. Harvey's No. 2 Cotton, drilling 2470 feet; No. 3 Cotton, drilling 640 feet; No. 5 Cotton, drilling 2300 feet; No. 7 Cotton, drilling 175 feet.

Home Oil & Refining Co.'s No. 1 Dawson, drilling 450 feet.

McDonald et al.'s No. 1 Drienhoffer, drilling 2050 feet.

Harkrider et al.'s No. 1 Webb, shut down 2720 feet.

Tex-Rickard's No. 3 Barker, drilling 710 feet.

Empire Gas & Fuel Co.'s No. 1 Allen, drilling 175 feet.

Falson Petroleum Co.'s No. 1 Hawk, drilling 2995 feet.

Texas Oklahoma Oil Dev. Co.'s No. 1 Church, shut down 2360 feet.

Southwestern Oil & Dev. Co.'s No. 2 Woods, drilling 175 feet.

Texas Venture Oil Co.'s No. 1 Niver, drilling 1790 feet.

Kentucky River Oil Co.'s No. 1 Niver, drilling 2250 feet.

Royal Duke Oil Co.'s No. 1 Hank, drilling 2450 feet.

Texas Crude Oil Co.'s No. 1 Lightfoot, shut down 900 feet; No. 1 Hawk, drilling 1025 feet.

Air-Tex Oil Co.'s No. 1 Brooks, drilling 2350 feet.

Hercules Petroleum Co.'s No. 1 Brook Heirs, drilling 1380 feet.

Riley et al.'s No. 1 Sue, shut down 2680 feet.

Hercules Pet. Co.'s No. 2 Holleman, drilling 1350 feet.

Porter Wertz Oil Syn.'s No. 5 Perkins, drilling 2070 feet.

McCombs Prod. & Refining Co.'s No. 2 Turner, drilling 1780 feet; No. 3 Turner, drilling 175 feet; No. 4 Turner, drilling 600 feet.

Bankers Oil & Gas Co.'s No. 1 States Land, shut down 750 feet.

Vulcan Oil Co.'s No. 1 Davis, drilling 630 feet; No. 1-B Davis, drilling 1025 feet; No. 2 B. A. Davis, drilling 2520 feet.

Ranger Brooks Oil Co.'s No. 1 Brook Heirs, shut down 1350 feet.

Fein et al.'s No. 1 Hawk, drilling 1040 feet.

Eastland Oil & Gas Co.'s No. 1 Olden Church, drilling 1900 feet.

Ranger West Virginia Oil Co.'s No. 1 Brown, drilling 1380 feet.

Waldron Oil Co.'s No. 1 Hawk, drilling 175 feet.

Arkansas Nat. Gas Co.'s No. 3 Connellee, setting casing 1435 feet; No. 1 T. Connellee, drilling 1125 feet.

Cosden Oil & Gas Co.'s No. 3 Holcomb, drilling 850 feet.

Day et al.'s No. 1 Downtain, drilling 1025 feet.

Foster et al.'s No. 1 Hilborn, setting casing 875 feet.

Humble Oil & Refining Co.'s No. 1 Qualls, shut down 2108 feet; No. 1 Britton, underreaming 1720 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Harrell, trying to set packer 2080 feet.

North American Prod. Co.'s No. 1 Connellee, drilling 2860 feet.

New Domain Oil & Gas Co.'s No. 1 Ward, underreaming 1250 feet.

Powers Interest's No. 1 Hill, shut down for boiler 500 feet.

States Oil Corp.'s No. 1 Bond, underreaming 1130 feet.

Simmons et al.'s No. 1 Ward, shut down 1650 feet.

El Paso Ranger & Ballentine's No. 1 Watson, drilling 500 feet.

Fensland Oil Co.'s No. 1 Stokes, drilling 750 feet.

Smith & Hess' No. 1 Davis, drilling 250 feet.

Gulf Production Co.'s No. 3 Gholson, drilling 2545 feet; No. 8 Barnes, setting casing 1570 feet.

Sun Company's No. 10 Rust, shut down for water, 220 feet; No. 11 Rust, drilling 885 feet.

RIGS.

The following are rigs:

Texas & Pacific Coal & Oil Co.'s No. 2 McCleskey Heirs; No. 2 Cook; Nos. 19 and 20 Brewer; No. 8 Hand; No. 1 Page; No. 3 Davenport; No. 4 Davenport; No. 8 Butler; Nos. 16 and 17 Butler; Nos. 6, 7, 8, 9 and 10 Norwood; Nos. 17, 19, 20 and 21 Norwood; No. 1 Dan Waggoner; No. 2 Rice; No. 2 Gerdes; Nos. 2, 3, 4, 5 and 6 Terrell; No. 1 Smith; No. 2 Davis; No. 1 Ames; No. 2 Meadows.

Prairie Oil & Gas Co.'s No. 7 Howard, Timbers; No. 4 Keaghey; No. 14 Terrell, Timbers; No. 4 Earnest; No. 2 Brewer; No. 5 Meyers; No. 2 Whitson; No. 2 Demic; No. 9 Roper; No. 3-A Madding; Nos. 3 and 4-B Madding; Nos. 6 and 7-B Madding; No. 1 Fox; No. 1 Walker; Nos. 3 and 4 Cotton; Nos. 4, 5 and 6 Meadows; Nos. 1 and 2 Davis; No. 1 Hanks; No. 1 Hatfield et al.

Humble Oil & Refining Co.'s No. 3 Sue; Nos. 2 and 3 Fargason; Nos. 6 and 7 Fargason; Nos. 3 and 4 States Land; Nos. 7 and 8 States Land.

Gladstone Oil Refining Co.'s Nos. 3 and 4 Wright.

Ranger-Texas Oil Co.'s No. 2 Harrell.

Cullinan et al.'s No. 4 Jones.

Magnolia Petroleum Co.'s Nos. 9, 10, 11 and 12 Nash; No. 13 Rock; Nos. 10, 11, 12, 13 and 14 Connellee; No. 2 Harris; Nos. 3 and 4 Harris; No. 5 Davis; No. 1 Loper.

Root et al.'s No. 1 Hunt; Nos. 8, 9 and 10 Poteet.

Wagner et al.'s No. 1 Duncan; No. 1 England.

Texas Company's No. 1 Boyd; No. 11 Boyd; No. 4 Hise; No. 2 Littleton; No. 15 Littleton; Nos. 3, 4, 5 and 6 Turner; Nos. 8 and 9 Turner.

Cosden Oil & Gas Co.'s No. 1 Dawson.

Vulcan Oil Co.'s No. 2 Davis.

Sullivan et al.'s No. 1 Downtain.

Root, Huff & Duff's No. 1 Carter, timbers.

Gulf Production Co.'s No. 4 Gholson; No. 9 Barnes.

Sun Company's No. 17 Rust; Nos. 3 and 4 Maynard; No. 2 Duncan.

LOCATIONS.

The following are locations:

Texas & Pacific Coal & Oil Co.'s No. 4 McCleskey; No. 5 Beidleman; No. 3 Gholson; No. 2 Henson; No. 3 Whitson; Nos. 3, 4, 5 and 6, Meadows.

Prairie Oil & Gas Co.'s No. 6 Woods; Nos. 5 and 6 Keaghey; No. 3 Terrell; Nos. 5 and 6 Johnson; No. 1 H. A. Demic; Nos. 2 and 3 Roper; No. 1 Beck; No. 2 Hesterlow; Nos. 3 and 4 Davis.

Humble Oil & Refining Co.'s No. 3 Scott; No. 5 Davis.

Magnolia Petroleum Co.'s No. 4 Harris; No. 7 W. A. Harris; No. 6 Davis.

Wagner et al.'s Nos. 6 and 7 D. McClesky.

Mid-Kansas Oil & Gas Co.'s Nos. 2 and 3 Harrell.

Westheimer Oil & Gas Co.'s Nos. 7 and 8 Griffin.

States Oil Corp.'s Nos. 2 and 3 Peel.

Tidal Oil Co.'s Nos. 9 and 10 Danley.

Drillers Oil & Gas Co.'s No. 3 Barnes.

Jagger Wallace Oil Co.'s No. 1 Barker.

Vulcan Oil Co.'s Nos. 4 and 5 B. A. Davis; Nos. 3 and 4 Hamer.

Gulf Production Co.'s No. 10 Barnes.

ANOTHER BANK FOR WICHITA FALLS.

Application has been made for a charter for the Security National Bank of Wichita Falls by W. Newton Maer, J. I. Staley and C. C. Cabiness. This will be the seventh bank in the city. Five are doing business now and a charter has been granted for a sixth.

STOCK UNITS TO BE REDUCED

For the convenience of stockholders, and to promote stability, the stock units of the Texas & Pacific Coal and Oil Company will be reduced from $100 to $10 by the company in business session at Thurber on November 11, according to an announcement from New York.

OPERATING COMPANY FORMED

The Globe Petroleum Corporation, chartered under the laws of Delaware, is an operating company for the Eagle Petroleum Company of Houston, having the same set of officers as the parent company. It is capitalized at $1,000,000 and its stock has been placed in New York. It has secured a permit to operate in Louisiana and has applied for a permit to do business in Texas.

The Eagle Petroleum Company has turned over its present production to the Globe organization, as well as some of the leases owned by the parent company. One of the leases consists of 2000 acres in the Homer field in Louisiana, on which development work will be started within the next 60 days.

As soon as sufficient production is secured by the Eagle Petroleum Company, it is planned to build a refinery. Whether it will be operated by the Eagle or a subsidiary organization has not yet been determined.

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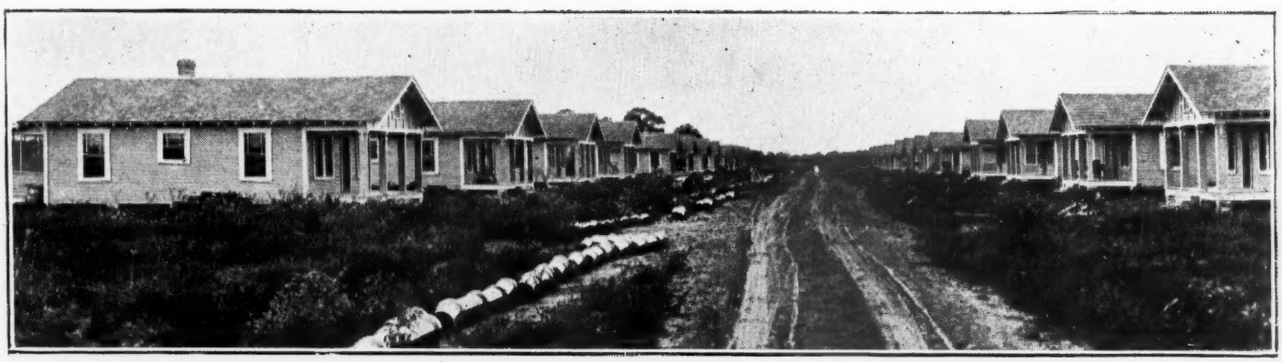


Ready Cut and Portable Houses

Crain Lumber Company

Houston, Texas

PERSONAL MENTION-MEN YOU KNOW

William Fisher, pioneer resident of Wichita County, died at the home of his son, J. A. Fisher, in Wichita Falls, on October 6. Two of his sons, J. A. and William Fisher, are prominent oil operators in Wichita Falls.

Emil Herz of New York City, manager of the Oklahoma-Texas Petroleum Co., is in Wichita Falls, looking after the interests of his company. The company is preparing for further drilling operations on its lease in block 88. An office is to be established in Wichita Falls, with George Trueblood in charge.

Joe Lee, superintendent at West Columbia for the Humble Oil & Refining Co., has been transferred to the Houston office of the company and promoted to assistant to W. W. Fondren, vice president in charge of drilling operations.

Guy W. Mosley of the Empire Gas & Fuel Company of Tulsa, and Miss Reba Moorehead of Dallas, were married in Dallas on October 10.

A. H. Gardner, sales manager of the Yuba Products Company of California, with Alex McCluskey and A. F. George of the A. F. George Company of California, were in Dallas this week on business.

A. F. Robertson, formerly of the Tulsa Democrat, the Tulsa World, the Oil and Gas Journal, and several other publications, died in Tulsa on October 11.

T. R. Lott of the Prairie Pipe Line Company has been made assistant manager of the pipe line department, his former place being filled by M. E. Fannon.

Walter Markham has returned from the army, where he held a captain's commission, and will be associated with his brother, John Markham, independent operator, of Tulsa.

G. M. Roach of Goodnight, Texas, in the Panhandle, was in Dallas attending the Fair, and stated that there is considerable interest in the development for oil in that part of the Panhandle. W. J. McCallister, independent operator of Wichita Falls, recently purchased the famous ranch and buffalo herd of Colonel Goodnight, and has a well drilling on the ranch. McCallister was at home to a host of oil men and friends in an old-time buffalo hunt and barbecue on labor day.

H. M. Frost of New York is in West Texas looking over the holdings of the Rosedale Oil Co., which recently completed a good well in the Desdemona field.

A. D. Morton of the Ryan Petroleum Co. of Wichita Falls, having production in the Burkburnett field, was in Fort Worth on business the latter part of the week.

J. P. Scranton, of the firm of J. P. Scranton & Co. of Dallas, has been in the West for three weeks, a part of the time on the Pacific coast.

C. E. (Red) Morris of the Gulf Production, made a short stop in Dallas last week to determine what will be the best day to take his family to the Fair. He wanted to pick out a day when there would be few people in attendance, as he says that he never saw anything in a crowd except people's legs. He is the shortest scout in the game, in feet and inches, but he will measure with any of them in every other way.

JOHN V. McMAHON, head of Fort Worth headquarters of the Sinclair Oil & Refining Corporation. He resigned as third vice president of Gypsy Oil Company to accept present position.

R. H. Wood of the geological survey, and V. O. Wood of the Ohio Oil Co., have formed a partnership for the practice of general petroleum geology, with headquarters in Tulsa.

John A. Anderson, of the firm of Anderson & Gustafson, marketers, Chicago, is again in North Texas after a visit to Tulsa and other points.

T. C. Moss of the Moss Petroleum Sales Co. of Dallas, has been planning to attend the I. O. M. A. convention in Chicago next week, but finds a formidable protest entered by his wife. Moss is strong for Chicago conventions, and is a well known guest at the Congress Hotel.

John N. Swanson, oil operator of Wichita Falls and Iowa Park, was in Houston this week.

Early Deane of Fort Worth, formerly district manager for the Peden Iron & Steel Co., and now an independent oil operator, has just returned from a trip to North Louisiana, and says the boys are not alive to the situation when they drill 3500 feet for 500 barrel wells in West Texas, when they can get real gushers in Louisiana at less than half that depth. Early has been giving all the fields the once over since he got his wings, and is trying to pick out a perfectly safe and sure place to make a landing. In the meantime he is still making some pictures.

J. E. Crowther of the Gulf Production Company, formerly in the Breckenridge district, has been transferred to Coleman.

Andrew Currie, Jr., who has extensive lease and royalty holdings in East Texas and North Louisiana; E. W. Goetz, who resigned on October 1 as head of the land department of the Louisiana Oil Refining Corporation, and C. R. Harrison, who has been chief assistant to Col. L. B. Webster, head of the land department of the Shreveport office of the Texas Company for the past four years, have associated themselves in a private partnership, under the firm name of Currie, Goetz & Harrison. Offices have been opened at 305-6 Simon Building, Shreveport, where the new firm will deal in production, royalties and leases.

H. A. Melat, of the Gulf Production Company in Fort Worth, was attending the State Fair in Dallas this week.

W. R. Guiberson and other officials of the Guiberson Oil Well Specialty Corporation, were in Dallas on business last Monday.

Robert Galbraith of Tulsa was in Dallas this week en route to the Southwest Texas fields.

A. J. Carr, of the Lucey Manufacturing Corporation of Houston, was in Dallas last week on business, and left for Shreveport.

R. E. Harris, of the Sun Company in Dallas, has been in Stephens County recently, looking over the company's activities.

D. W. Maurer, independent operator of Dallas, has returned from an extended visit in New York.

Dr. P. S. Griffiths returned to Houston this week after a trip of inspection to a test east of Colorado Springs, Colo., which is down around 1900 feet and is making sufficient gas to fire the boiler. Dr. Griffiths said that there was considerable drilling activity in that section and that Stewart and Dodson et al., of Wichita Falls had set up a first clas rig to drill south of Colorado Springs and three other oil operators from Wichita Falls were making preparations to drill in this section.

Civic Matters Interest This Oil Man

J. S. Cullinan Finds Time to Help Make Life Better For All

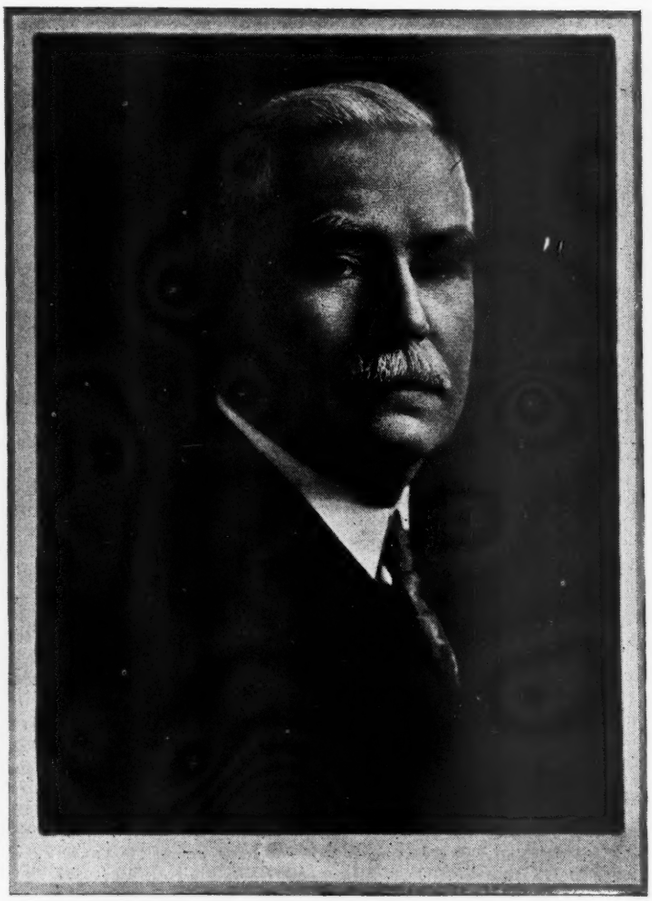
BORN the last day in the year 1860, in Sharon, Pa., Joseph Stephen Cullinan, best known as an oil man, but recognized by his closest friends as one of the deepest thinkers of the day along constructive and civic lines, has been and is giving lavishly of his time and talent to the establishment of business methods in the handling of public affairs and to experiments that will redound to the betterment of those who are seeking to make their homes in Texas, the greatest and largest state in the Union.

Mr. Cullinan came to Texas in October, 1897, and in January, 1898, took up his residence at Corsicana, one of the first oil centers of Texas. He spent considerable time at Beaumont during the days of Spindleton, and in 1905 took up his permanent residence in Houston where he has just recently completed a beautiful home built as a haven for his declining years.

President The Texas Company.

He was president and the guiding spirit in the Texas Company for many years, and during his reign this company was built from a small beginning to the place it now occupies as one of the greatest independent producing, refining and transporting oil companies in the nation. In 1913 Mr. Cullinan resigned the presidency of the Texas Company, and since that time has given his undivided attention to other oil companies in which he is interested and civic and constructive matters looking to the betterment of life.

Mr. Cullinan is a member of the National Economic League, American and National Geographic Societies, Academy of Social, Political Science and the National Democratic Club, and many other clubs and societies. He is a Democrat, but has never held nor asked public office and is a modified single-taxer in that he is a believer in and an advocate of deriving such revenue from land, income and inheritance.



J. S. CULLINAN

Although Mr. Cullinan has always been adverse to holding any political office, he has always been most interested in the general welfare of his city, his state and his nation. During the trying times preceding and during the great world war, he gave unstintingly of his time, money and talent in the interest of his country. He is and has been for years in close touch with those who guide the destinies of this nation from their seats at Washington and much of his time during the war was spent at Washington. What he did was much, but never at any time did he step into the spot light. He glories in the accomplishment of the deed rather than the plaudits of the crowds.

President Houston Chamber.

Some daring mind a few years ago suggested that J. S. Cullinan was the proper man to guide the destinies of the Houston Chamber of Commerce, the organization which Mr. Cullinan has called the power house of the city, during the stressing times of war. He was offered the place by wire and the reply came from Washington where he was engaged almost daily in conferences of much moment, that he would accept. He thought his home city needed him and accepted the important post. Practically all of his time not needed by the government, was given to efforts to make his city the New York of the South.

That he accomplished much is known by those closest to him and to his co-workers in the Chamber. Due to his personal influence in Washington and the high opinion he commanded in administration circles at the Capital, he was instrumental in securing Camp Logan and Ellington Field for Houston and Harris county.

Texas Chamber Organized.

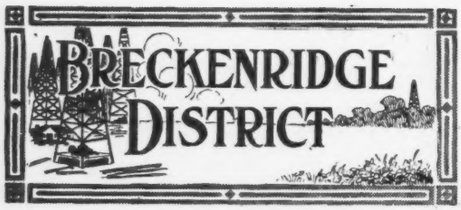
When the time seemed opportune for the organization of the Texas Chamber of Commerce through the merging of a number of important civic and business organizations of the state, the leading citizens turned to Mr. Cullinan to act as the new organization's first president. He accepted the post, but insisted that his trusted lieutenant, James Z. George, who had worked hand in hand with him as manager of the Houston Chamber of Commerce, and who had helped him to accomplish so much, be borrowed from Houston to fill the post of vice president and general manager of the organization . Naturally Mr. Cullinan's request was granted. The state body is just reaching a fully organized state and its activities are reaching out more and more each month.

Mr. Cullinan some years ago established a demonstration farm, known as Santa Anna Farm, at Pasadena, where he is by example showing the farmers of the Gulf Coast what can be accomplished in the Houston district. Particular attention is being paid to the value of graded cattle for the dairy herd. His farm consists of 200 acres, stocked with high-grade Guernsey cattle, celebrated in Texas where graded cattle are appreciated. At first the farmers in the Houston district were a little timid about visiting the model farm, but this has been changed. They now see and realize that Mr. Cullinan wants to help them improve their herds and thereby improve their conditions and fortunes. Farmers are frequent visitors now.

Interested in Many Companies.

Mr. Cullinan is a director in the Fidelity Trust Company of Houston, president of the American Republics Corporation (holding company for the various companies in which he is largely interested), president of the Galena-Signal Oil Company of Franklin, Pa., and is also interested in a number of other companies.

Mr. Cullinan has given freely to all worthy charities and causes, but never permits publication of his gifts if it can be prevented.



STEPHENS PRODUCTION ABOVE 44,000 BARRELS.

The daily production of Stephens County for the past week was distributed approximately as follows:

	Barrels.
Magnolia Petroleum Co.	1,375
Gulf Production Co.	7,600
Prairie Oil & Gas Co.	1,000
The Texas Co.	9,900
Texas & Pacific Coal & Oil Co.	1,300
Mid-Kansas Oil & Gas Co.	4,790
Sun Company	900
Sinclair Gulf Oil Co.	1,750
Humble Oil & Ref. Co.	75
Miscellaneous	15,500
Total	44,190
Lost Work	43,150

COMPLETIONS IN STEPHENS COUNTY.

Magnolia Petroleum Co.'s No. 1 Frost is completed for 250 barrels a day at 3276 feet.

The Texas Co.'s No. 1 Norwell has salt water at 3452 feet.

Gulf Production Co.'s No. 5 Fencher is abandoned at 3232 feet.

The Texas Co.'s No. 4 Brooks is completed for 700 barrels at 3170 feet.

The Texas Co.'s No. 3 Curry is a 1200 barrel well at 3220 feet.

Gulf Production Co.'s No. 1 Langford is making 350 barrels at 3495 feet, and the No. 1 Stoker is abandoned at 3640 feet.

Oklahoma Producers and Ref.'s No. 1 Walker was shot with 60 quarts and is making 125 barrels a day at 3192 feet. It was reported last week making 30 barrels, before the shot.

The Texas Co.'s No. A-15 Parks is a 100 barrel well at 1917-87 feet.

Gulf Production Co.'s No. 7 Fencher was shot with 120 quarts at 3372 feet, and is flowing 1200 barrels; No. 2 Winston is a 200 barrel well after 240 quarts of nitro had been given at 3327-3415 feet.

Prairie Oil & Gas Co.'s No. 1 Binny is a 1000 barrel well at 3230-73 feet.

Oklahoma Producers & Ref'rs. Corp.'s No. 7 Swenson is a 100 barrel well at 3431, after a shot.

Monitor Oil & Gas Co.'s No. 13 Swenson is a 900 barrel well at 3400 feet.

Gulf Production Co.'s No. 3 Rollins is making 300 barrels at 1828 feet.

Palo Pinto Oil Co.'s No. 4 Swenson is a 500 barrel well at 3035 feet.

The Humble Oil & Ref. Co.'s No. 1 Coffman is making 50 barrels at 3560 feet.

WELLS NEARING COMPLETION.

Mid-Kansas Oil & Gas Co.'s No. 4 Wright got the top of the lime at 3161 feet, and is drilling at 3250 feet.

Prairie Oil & Gas Co.'s No. 2 White is making 10 million feet of gas at 3234 feet.

Sinclair Gulf Oil Co.'s No. 1 Jones is swabbing at 3470 feet.

Skelley and Sankey's No. 1 Branch is showing salt water at 3162 feet, and No. 1 Russell is cleaning out at 3400 feet.

Empire Gas & Fuel Co.'s No. 1 Stevenson is making a showing of oil at 3125, and drilling.

Magnolia Petroleum Co.'s No. 3 Frost is shut down at the top of the pay at 3160 feet.

Sinclair Gulf Oil Co.'s No. 1 Lee is shut down at the top of the pay at 3261 feet.

Cosden Oil & Gas Co.'s No. 1 Compton is still drilling and making a showing of oil, at about 3750 feet.

The Texas Co.'s No. 2 Pierce is shut down at 3285 feet, and flowing about 60 barrels a day. No. 1 Brooks is shut down for storage at 3165 feet.

Prairie Oil & Gas Co.'s No. 1 Atkins is shut down for storage at 3178 feet. No. 1 Corbett was shot with 140 quarts, with no results, at 3925 feet, and will give another shot at about 3600 feet.

The Texas Co.'s No. 3 Sandidge is shut down for storage at 3350 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Milam is showing for a well at 2200 feet, and No. 1 Graham, west of Ivan, is shut down for connections.

The Sun Co.'s No. 1-B Jennings is making 15 million feet of gas at 3176 feet, and No. 1 Christmas is preparing for a shot at 3502 feet.

STEPHENS COUNTY WELLS BELOW 3000 FEET.

Prairie Oil & Gas Co.'s No. 1 Dempsey, drilling 3260 feet; No. 1 Scott, drilling 3810 feet; No. 1 Langford, shut down 3315 feet; No. 1 Demic, shut down 3578 feet; No. 1 Turner, drilling 3370 feet; No. 1 Goforth, shut down 3590 feet; No. 1 Gardenshire, drilling 3635 feet; No. 1 Jennings, drilling 3455 feet.

Texas & Pacific Coal & Oil Co.'s No. 1 Haney, fishing 3530 feet; No. 1 Bargsley, shut down 3990 feet; No. 2 Brown, fishing 3518 feet; No. 2 Rogers, cleaning 3198 feet; No. 1 Rochelle, cleaning 3196 feet; No. 1 Harrison, drilling 3130 feet.

Texas Company's No. 1 Chaney, pulling pipe 3188 feet; No. 2 J. M. Parks, skidding rig; No. 1 Houston, shut down 3344 feet; No. 1 Pratt, shut down 4020 feet; No. 3 Keithly, drilling 3275 feet.

West Texas Oil Co.'s No. 1 Dempsey, shut down 3660 feet.

McMann Oil Co.'s No. 1 Williams, fishing 3605 feet.

Walker Caldwell Producing Co.'s No. 1 Jones, shut down 3235 feet.

Bankers Oil & Refining Co.'s No. 1 McElroy, fishing 3188 feet.

Phillips Petroleum Co.'s No. 1 Brown, drilling 4205 feet.

Tucker et al.'s No. 1 Sudderth, shut down 3762 feet.

Mid-Kansas Oil & Gas Co.'s No. 3 Yates, drilling by pipe 3235 feet; No. 3 Carey, fishing 3416 feet; No. 4 Carey, cleaning out 3405 feet; No. 1 Rosenquest, drilling 3265 feet.

Gulf Production Co.'s No. 5 Davis, shut down 3082 feet; No. 1 Humphrey, shut down 3316 feet; No. 2 Hagaman, waiting on shot 3485 feet; No. 10 Fincher, shut down 3305 feet; No. 1 Sherman, drilling 3230 feet.

Wrightman et al.'s No. 1 Harris, fishing 3296 feet.

Magnolia Petroleum Co.'s No. 1 Pogue, drilling 3020 feet.

Cosden Oil & Gas Co.'s No. 3 Long, fishing 3471 feet.

Cunningham et al.'s No. 1 Buchanan, moving back boiler 3125 feet.

Sinclair Gulf Oil Co.'s No. 2 Ledbetter, drilling 3225 feet; No. 1 Long, pulling pipe 3446 feet; No. 2 Long, fishing 3388 feet.

King Midas Oil Co.'s No. 1 Harris, drilling 3335 feet.

Humble Oil & Refining Co.'s No. 1 Ingram, drilling 3500 feet; No. 1 Frost, cleaning out bridge after shot 3350 feet; No. 3 Frost, cleaning out bridge after shot 3370 feet; No. 2 Coffman, cleaning out 3445 feet; No. 3 Coffman, shut down 3498 feet.

Jake Hamon's No. 1 Coffman, pulling pipe 3360 feet.

Leon Oil Co.'s No. 1 Simmons, drilling 3215 feet.

Skelley & Sankey's No. 1 Russell, cleaning out 3400 feet.

Phillips Petroleum Co.'s No. 2 Long, pulling pipe 3308 feet.

Monitor Oil & Gas Co.'s No. 8 Swenson, fishing 3330 feet; No. 9 Swenson, fishing 3401

More Than 700 Wells Drilling or Preparing to Drill in Stephens

A MAN who had his knowledge of the development of the fields of Texas from gossip and news reports was in Dallas recently, and called upon one of the major companies for some information. In the course of his conversation, he remarked that there is evidently not much doing in Stephens county, as you never hear it talked very much.

As a matter of fact there are more wells drilling or ready to drill in the fields of Stephens county than anywhere else in West Texas. Eastland county has two distinct fields, the Ranger section and the territory around Desdemona, which combined would give more tests to Eastland county. The fact that these fields are further removed from each other than the Ranger field is from the first product in Stephens County on the north, however, gives Stephens county the title to more tests under way than any other field.

Big Companies in Majority.

The explanation for the lack of current gossip about Stephens county is in the fact that it is being drilled by the major companies, practically all the acreage of the county being in the hands of a comparatively few producers. It is the fields of Desdemona, Burkburnett and places where the acreage is broken up between unnumerable individuals and stock companies, that get the big headlines.

At the close of last week there were 703 wells drilling, rigs and locations in Stephens county. This number is being increased as rapidly as trucks and tractors can convey drilling material into the county. There is no railroad serving the county, and all material has to be freighted. The highways are well nigh impassable even in dry weather, and when it rains—well, telephone messages get bogged up.

The actual number of wells drilling is a variable quantity, each day seeing wells completed, and new wells started. Figures compiled within a few days of their date of publication, however, will be sufficiently accurate to indicate the amount of work under way, and by whom the tests are being made.

Texas Company Leads.

The following table shows the number of drilling wells, rigs and locations by companies, in the Stephens county section. These figures, subject to slight alterations by a few days' activities in the fields, are the best indication of what is happening in one county in West Texas. It is to be noted that the Texas Co. leads all other companies by a big margin in drilling activities, and the Gulf Production Co. is second.

Gulf Production Co.	63
Prairie Oil & Gas Co.	40
Texas Co.	121
Mid-Kansas Oil & Gas Co.	43
Humble Oil & Ref. Co.	42
Sinclair Gulf Oil Co.	49
Texas & Pacific Coal & Oil Co.	60
Magnolia Petroleum Co.	20
Lone Star Gas Co.	14
Sun Co.	32
Miscellaneous	219
	703

feet; No. 10 Swenson, cleaning after shot 3471 feet.

Crosbie et al.'s No. 3 Hagaman, shut down 3090 feet.

Phillips Petroleum Co.'s No. 1 Booles, shut down 3750 feet; No. 3 Booles, drilling 3490 feet.

Stanton Oil Co.'s No. 1 Sudderth, fishing 3440 feet.

Ranger Oil Syn.'s No. 1 Booles, drilling, 3545 feet.

Palo Pinto Oil & Gas Co.'s No. 3 Swenson, shut down 3420 feet.

Ohio Cities Oil & Gas Co.'s No. 1 Collier, shut down 3500 feet.

Desney & McFall's No. 1 Coffman, drilling 3590 feet.

Sinclair Gulf Oil Co.'s No. 2 Sattfield, cleaning out 3055 feet.

Quakins Petroleum Co.'s No. 1 Harmon, shut down 3336 feet.

The Sun Co.'s No. 4 McMeen is drilling at 3340 feet, No. 3 W. E. Carey is changing tools at 3220 feet, No. 4 Rosenquest is ready to resume drilling at 3310 feet.

OTHER WELLS IN STEPHENS COUNTY.

Texas Company's No. 4-B Parks, fishing 2222 feet; No. 4-A Parks, shut down 2400 feet; No. 2 Chaney, drilling 2200 feet; No. 6-A Parks, drilling 2000 feet; No. 1 Beck, fishing 2375 feet; No. 1 Marlin fishing 550 feet; No. 2 Black Bros., shut down 1050 feet; No. 3 Stoker, drilling 765 feet; No. A-9 Parks, drilling 1278 feet; No. 3 Lauderdale, fishing 2395 feet; No. 1 Frost, drilling by tools 1964 feet; No. A-10 Parks, drilling 1520 feet; No. A-11 Parks, setting casing 1441 feet; No. 5 Stoker, drilling 1669 feet; No. A-13 Parks, shut down 2343 feet; No. 2 Grosclose, setting casing 2620 feet; No. 3 Grosclose, shut down 1300 feet; No. 1 Cook, pulling pipe, 1550 feet; No. 1 Jackson, drilling 1550 feet; No. 4 Keithley, drilling 3000 feet; No. — Carey, setting casing 1175 feet; No. 1 Neil, drilling 2020 feet; No. 1 Bradshaw, shut down 749 feet; No. 2 Beck, shut down 1457 feet; No. 3 Black Bros., drilling 1984 feet; No. 4 Black Bros., drilling 1025 feet; No. 6 Lauderdale, drilling 1490 feet; No. 1 Martin, cleaning out 455 feet; No. A-16 Parks, drilling 2525 feet; No. A-17 Parks, cleaning out 1360 feet; No. 1 Thomas, shut down for bull wheel 1075 feet; No. 1 Day, drilling 2335 feet; No. 1 Grimes, drilling 460 feet; No. 1 L. F. Grimes, drilling 1210 feet; No. 1 Dixon, shut down 2040 feet; No. 2 Jackson, drilling 985 feet; No. 1 Rosenquest, drilling 1785 feet; No. A-19 Parks, drilling 1315 feet; No. 5 Black Bros., fishing 865 feet; No. 2 Havens, fishing 490 feet; No. 1 Stoker, shut down 862 feet; No. 1 Spear, drilling 175 feet; No. 1 Kennedy, drilling 998 feet; No. 5 Sandidge, repairing claf wheel 1650 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Magers, drilling 1800 feet; No. 1 Kloh, underreaming 2678 feet; No. 1 McMeen, drilling 3000 feet; No. 2 McMeen, drilling 2170 feet; No. 1 Satterfield, drilling 1800 feet; No. 1 Yates (acc't 4), waiting on underreamer 1700 feet; No. B-1 Rosenquest, drilling 1690 feet; No. 3 Wright, drilling 1270 feet; No. 1 Herrington, underreaming 1125 feet; No. 1 R. G. Stoker, shut down for fuel 560 feet; No. 3 Knott, drilling 1045 feet; No. 5 Knott, drilling 1050 feet; No. 6 Knott, drilling 545 feet.

Gulf Production Co.'s No. 3 Fincher, shut down 2460 feet; No. 1 Rollins, fishing 1830 feet; No. 1 Stanford, shut down 1595 feet; No. 1 Stuart, fishing 1060 feet; No. 1 Harris, drilling 2235 feet; No. 2 Harris, drilling 1900 feet; No. 3 Gholson, drilling 2360 feet; No. 9 Fincher, drilling 800 feet; No. 3 Winston, drilling 1940 feet; No. 5 Winston, drilling 400 feet; No. 1 Johnston, drilling 1025 feet; No. 1 Harris & Fambrough, drilling 440 feet; No. 1 Crowley, drilling 1630 feet.

Pierce Oil Corp.'s No. 1 Smith, drilling 1230 feet; No. 1 Glenn, fishing 2520 feet.

Sinclair Gulf Oil Co.'s No. 1 Veale, shut down 1520 feet; No. 1 Hodges, drilling 450 feet; No. 1 Maxwell, drilling 2330 feet; No. 1 Sloan, drilling 1030 feet; No. 6 Coody, underreaming 1830 feet; No. 1 Ellis, drilling 1400 feet; No. 1 Simmons, drilling 625 feet; No. 7 Coody, drilling 2975 feet; No. 2 Smith, drilling 650 feet; No. 1 Newman, fishing 1105 feet; No. 8 Coody, setting casing 2195 feet; No. 3 Satterfield, drilling 2025 feet; No. 3 Vaughn, drilling 175 feet; No. 4 Vaughn, drilling 1900 feet; No. 7 Ledbetter, shut down for crew, 890 feet; No. 1 W. C. Ledbetter, drilling 2100 feet; No. 1 S. E. Ledbetter, underreaming 1340 feet.

Thomas Oil Union's No. 1 Whittenberg, drilling 2884 feet.

Sammies Oil Corp.'s No. 1 Thorp, shut down 1740 feet.

Magnolia Petroleum Co.'s No. 1 Nemir, drilling 1090 feet; No. 1 Sullivan, underreaming 2391 feet; No. 1 Norvell, drilling 2760 feet; No. 4 Frost, drilling 2999 feet; No. 1 Hays, drilling 2275 feet; No. 2 Trammell, fishing 870 feet.

Prairie Oil & Gas Co.'s No. 1 Graves, fishing 1760 feet; No. 1 Riddle is shut down at 590 feet; No. 1 Gardenshire is drilling at 1900 feet; No. 1 Sparks is drilling at 2200 feet; No. 2 Binny is fishing at 1600 feet; No. 2 Sparks is drilling at 2800 feet.

Brown Oil Co.'s No. 2 Heatley, underreaming 2410 feet.

Humble Oil & Refining Co.'s No. 1 Glenn, drilling 1670 feet; No. 1 Thompson, drilling 900 feet; No. 1 Hart, shut down 650 feet; No. 1 Sorgee, shut down 1865 feet; No. 1 Collins, drilling 1550 feet; No. 2 Collins, drilling 825 feet; No. 1 McKnox, shut down 2200 feet; No. 1 Jones, drilling 500 feet; No. 1 Keel, fishing 1725 feet; No. 2 Frost, drilling 2000 feet; No. 1 Harris, setting casing 1875 feet; No. 2 Ingram, drilling 1500 feet; No. 3 Ingram, drilling 980 feet; No. 4 Ingram, drilling 1025 feet; No. 1 Castleman, drilling 300 feet; No. 2 Sorgee, shut down 1200 feet; No. 2 Lane, repairing rig 525 feet; No. 3 Lane, drilling 600 feet; No. 3 Sorgee, underreaming 1219 feet; No. 1 Alexander, shut down 100 feet; No. 8 Harris, repairing rig 300 feet; No. 2 Frost, drilling 1045 feet.

Tidal Oil Co.'s No. 1 Goodwin, shut down 1370 feet.

Lone Star Gas Co.'s No. 2 Warren, drilling 1705 feet; No. 1 Wright, shut down 2600 feet; No. 3 Langford, drilling 820 feet; No. 1 Harris, drilling 605 feet.

Kirkwood et al.'s No. 1 Holland, drilling 550 feet.

Southwestern Petroleum Co.'s No. 2 Scallorn, drilling 1600 feet.

Allies Oil Corp.'s No. 1 Matthews, drilling 1025 feet.

Beaver Valley Oil Co.'s No. 1 Walker, shut down 100 feet.

Brown Oil Co.'s No. 1 Jones, drilling 2660 feet.

Chapman et al.'s No. 1 Glenn, drilling 1800 feet.

Jake Hamon's No. 2 Coffman, shut down 1700 feet.

Hivick et al.'s No. 1 Dupres, drilling 2250 feet.

Leon Oil Co.'s No. 2 Simmons, drilling 1740 feet.

Owen & Wilson's No. 2 Harrison, drilling 1330 feet.

Pacific Petroleum Co.'s No. 1 McGlathlin, drilling 1530 feet; No. 1 Jones, water sand 640 feet.

Plains Oil & Gas Co.'s No. 1 Stephenson, drilling 860 feet.

Ranger Texas Oil Co.'s No. 3 Booles, drilling 890 feet; No. 1 Dupres, shut down 2600 feet.

Texas & Pacific Coal & Oil Co.'s No. 3 Carey, shut down 2045 feet; No. 1 Harris, drilling 250 feet; No. 2 Lee, drilling 1610 feet; No. 1 McDonald, shut down 2020 feet; No. 1 Terrell, drilling 950 feet; No. 1 Young, drilling by pipe 1310 feet; No. 2 Winston, underreaming 2080 feet; No. 2 Rainey, drilling 2225 feet; No. 2 Mitchell, fishing 2600 feet; No. 1 Graham, drilling 2685 feet; No. 1 Cooper, drilling 1025 feet; No. 2 Adams, shut down 1800 feet; No. 1 Remington, drilling 250 feet; No. 2 Remington, drilling 1000 feet; No. 4 Rogers, drilling 600 feet; No. 1 Litton, shut down 640 feet; No. 2 Harrison, drilling 986 feet; No. 1 Newham, drilling 1240 feet.

Monitor Oil & Gas Co.'s No. 11 Swenson, drilling 2500 feet; No. 12 Swenson, drilling 1500 feet; No. 14 Swenson, drilling 2490 feet; No. 15 Swenson, drilling 1780 feet.

El Paso Bankers Oil & Gas Co.'s No. 1 Harris, drilling 650 feet.

Vulcan Oil Co.'s No. 1 Decker, drilling 600

Wells Below 3000 Feet Have Big Potential Production in Stephens

One hundred twenty-five wells in Stephens County that are at depths below 3000 feet have additional potential production that will materially increase the daily output of the fields of that county when any appreciable number of the wells are completed.

The heavy rains of the past ten days in West Texas have hit the Stephens County development harder than at any other place in the state, due to the fact that every piece of material for the drilling wells of the county has to be hauled from 6 to 35 miles, and over roads that are bad at best, and impassable in wet weather.

Because of this condition it is expected that new development will be rather slow in this county during the coming week or two weeks, or until the roads again become navigable.

The 125 wells that are nearing completion depths in this county are scattered over a wider area of territory than in any other section of the country. From the Phillips Petroleum Co.'s test on the Brown lease in the northwestern part of the county, to the Cosden Test on the Compton in the southwest, and from the Black Brothers and Hill leases in the northeast to the Chambliss Survey in the southeast, and even across the line east into Palo Pinto County, there are many wells that are nearing the pay horizon, and expected to show their possibilities with a few days of good drilling weather. This territory embraces practically the whole county.

One of the most interesting sections of the county right now is that district immediately north of Breckenridge where a new extension was added by the completion of a 600 barrel well on the Ward tract by the Gulf Production Company, and by the Ackers well of Snowden et al. A number of new tests are starting in this district, and it will soon be one of the most active spots of the county.

The extension southwest of Caddo, the shallow sand just across the county line north of the town of Eastland, and the extension of the Caddo producing district into Palo Pinto county, are all important developments that are being closely watched. The T. & P.'s well on the Stuart lease in Palo Pinto is believed to be an extension of the shallow pay district found by several tests in the eastern and southeastern part of Stephens. The Sun Co. got a sand in its McMeen wells in the Caddo district at 2100 feet that was good for 300 to 500 barrels a day, and the Lone Star Gas Co. got a 1700-foot pay sand in its Warren well in section 64, block 4, T. & P. Ry. survey, right near the Palo Pinto line, that showed 100 barrels a day. The Strab Oil Co. also got the 1700-foot sand in its Pierce in the southeastern part of the county.

feet; No. 1 Fletcher, drilling 850 feet; No. 1, Walker, drilling 450 feet.

Martin Oil Co.'s No. 1 Hall, shut down 1950 feet.

Manhattan Oil Co.'s No. 1 Hall, drilling 2450 feet.

Lambert et al.'s No. 1 Compton, drilling 1650 feet.

Kansas Texas Oil Co.'s No. 1 Stanford, shut down 450 feet.

Landreth et al.'s No. 1 Smith, shut down 1350 feet.

Stewart & Samuels' No. 1 Stanford, drilling 2000 feet.

Pierce Oil Corp.'s No. 1 Yandell, drilling 2290 feet.

Moore & Rosiers' No. 1 Madding, drilling 2500 feet; No. 2 Madding, drilling 1480 feet.

Empire Gas & Fuel Co.'s No. 1 Williams, drilling 1500 feet.

Texas Cushing Oil Co.'s No. 1 Harris, fishing 2390 feet.

Tuman Oil Co.'s No. 1 Harris, shut down 1540 feet.

Texas Arkansas Oil Co.'s No. 1 Alexander, shut down 2020 feet.

Franchat Oil Co.'s No. 1 Jackson, shut down 2630 feet.

Robert Jordan et al.'s No. 1 Cobant, bad hole, 1080 feet.

Gatewood Oil Co.'s No. 1 Dozier, shut down 2325 feet.

Brazos River Oil Co.'s No. 3 Massenburg, drilling 1700 feet.

Pierce Oil Corp.'s No. 2 Satterfield, drilling 1960 feet.

Jake Hamon's No. 1 Pierce, drilling 1930 feet.

Furlough et al.'s No. 1 Sawyer, drilling 2000 feet.

Home Oil & Refining Co.'s No. 1 Stanford, drilling 540 feet.

Royal Stephens Oil Co.'s No. 1 Andrews, shut down 1505 feet.

Integrity Oil Co.'s No. 1 Stanford, drilling 1500 feet.

Atlantic Oil Producing Co.'s No. 1 Dunlap, drilling 1000 feet.

Fidelity Oil Co.'s No. 2 Harris, drilling 2570 feet; No. 3 Harris, drilling 1970 feet.

6666 Oil Co.'s No. 1 Pratt, drilling 2965 feet.

Breckenridge Oil & Gas Co.'s No. 1 Wragg, shut down 420 feet.

Phillips Petroleum Co.'s No. 1 Lamb, drilling 250 feet.

Swensondale Oil Co.'s No. 3 Swenson, drilling 2160 feet; No. 4 Swenson, drilling 1200 feet.

Thraves Oil Co.'s No. 1 Stevenson, drilling 2470 feet.

Westheimer Oil & Gas Co.'s No. 2 Bratton, drilling 425 feet.

Dr. Fred Cook et al.'s No. 1 Bratton, drilling 700 feet.

Phillips Petroleum Co.'s No. 3 Long, drilling 950 feet.

Painsett Oil Co.'s No. 1 Sudderth, drilling 2000 feet.

Quakins Petroleum Co.'s No. 1 Langford, fishing 1430 feet; No. 1 Satterwhite, shut down 2170 feet.

Greenwood & Terrell's No. 1 Baggett, drilling 1350 feet.

Texhoma Oil Co.'s No. 2 Ledbetter, shut down 200 feet.

Fensland Oil Co.'s No. 1 Walker, drilling 1710 feet.

Quakins Petroleum Co.'s No. 1 Bruce, drilling 1025 feet.

The Sun Co.'s No. 1 Lee is drilling at 1200 feet; No. 6 McMeen is drilling at 150 feet; No. 2-B Rochelle is drilling at 1400 feet; No. 1 Corbett is rigging up at 1410 feet; No. 5 Carey is drilling at 920 feet; No. T J. A. Carey is drilling at 500 feet; No. 3 Rosenquest is drilling at 400 feet; No. 6 Rosenquest is drilling at 1450 feet; No. 1-A Rochelle is repairing rig at 1220 feet; No. 1 Donnell is drilling at 2200 feet.

STEPHENS COUNTY RIGS.

The following are rigs:

Texas Co.'s No. 2 Keithly; No. 3 Brooks; No. 3 Thomas; No. A-7 Parks; No. A-8 Parks; No. 5 Brooks; No. 5 Curry; No. 6 Brooks; No. 1 W. M. Houston; No. 1 Mrs. S. Houston; No. 2 Womack; No. 3 Pierce; No. 4 Pierce; A-18 Parks; No. 8 Brooks; No. 6 Black Bros.; No. 5 Pierce; No. 3 J. M. Parks; No. 1 Truesdale; No. 1 Beck; No. 2 Frost; No. 3 Smith; No. 4 Smith; No. 3 Billingsley; No. 4 Billingsley; No. 2 Sikes; No. a-21 Parks; No. 1 Lusk; No. 1 Cooper; No. 2 Black; No. 1 Ackers; No. 3 Kennedy; No. 3 Chaney; No. 3 Rosenquest; No. 3 Bradshaw; No. 4 Booles; No. 5 J. M. Parks; No. 6 Curry; No. 1 Tomlinson; No. 2 Day; No. 7 Lauderdale; No. 8 Lauderdale.

Weimar Oil Co.'s No. 2 Booles.

Cosden Oil & Gas Co.'s No. 6 Vaughn.

Humble Oil & Refining Co.'s No. 4 Harris; No. 4 Sorgee; No. 1 Pendleton; No. 1 Salter; No. 4 Layne.

Levy et al.'s No. 3 Harrison.

National Oil & Refining Co.'s No. 1 Dawney.

Sinclair Gulf Oil Co.'s No. 1 Watson; No. 3 Vaughn; No. 5 Vaughn; No. 9 Coody; No. 1 Reed; Nos. 3, 4, 5, and 6 Lee; Nos. 8 and 9 Ledbetter; No. 1 Thrap.

Jagger Wallace Oil Co.'s No. 1 Odd Fellows.

Home Oil & Refining Co.'s No. 2 Stanford.

Mid-Kansas Oil & Gas Co.'s No. 2 Rosenquest; No. 3 McMeen; No. 7 Knott; No. 8 Knott; Nos. 5 and 6 Carey; Nos. 9, 10, 11, and 12 Knott; No. 2 Jackson; No. 1 Gantt; No. 1 Binney; No. 2 Herrington; No. 3 Cook.

Romine Oil Co.'s No. 1 Smith.

Texas & Pacific Coal & Oil Co.'s No. 4 Herrington; No. 3 Rainey; No. 3 Riddle; No. 2 Jackson; No. 1 Pierce; No. 1 Lippe; No. 1 Langford; Nos. 17, 18 and 19 Binney.

Monitor Oil & Gas Co.'s Nos. 16, 17, 18, 19, 20 and 21 Swenson.

Gulf Production Co.'s No. 1 Knight; No. 3 McCauley; No. 1 Sullivan; No. 1 Langston; No. 2 Herrington; No. 1 Moore; No. 1 Smith; No. 2 Smith; No. 3 Smith; No. 11 Fincher; No. 3 Stoker; No. 2 Johnson; No. 3 Johnson.

Prairie Oil & Gas Co.'s No. 3 and 4 Binney; Nos. 1 and 2 Sorgee; Nos. 5, 6, 7 and 8 Binney.

Gladstone Oil & Refining Co.'s No. 1 Stephenson.

Magnolia Petroleum Co.'s No. 2 Ward; No. 1 McCauley.

Jake Hamon's No. 1 Guffey.

Atlantic Oil Producing Co.'s No. 1 West.

Ranger Texas Oil Co.'s No. 4 Booles.

New Domain Oil & Gas Co.'s No. 1 Thrap.

Stewart & Samuel's No. 2 Stanford.

Quakins Petroleum Co.'s No. 1 Bruse; No. 1 Langford.

Sammies Oil Corp.'s No. 1 Baggett.

Getch et al.'s No. 1 Williams.

Shamrock Oil Co.'s No. 1 Veale.

Cooper & Henderson's No. 1 Lavender.

Crowell & Grant's No. 1 Herrington.

The Sun Co.'s No. 2-B Jennings; No. 3-B Jennings; No. 2 Lee; No. 3-B Rochelle; No. 1-B Rosenquest; No. 2-B Rosenquest; No. 5 Carey and No. 4 Carey; Nos. 6, 7, 8, 9, 10, 11 and 12 Carey; No. 5 Rosenquest; No. 7 Rosenquest; No. 1 Harris.

STEPHENS COUNTY LOCATIONS.

The following are locations:

Gulf Production Co.'s No. 1 Pratt; Nos. 4 and 5 Caldwell.

Southwestern Petroleum Co.'s No. 3 Scallorn.

Lone Star Gas Co.'s Nos. 1, 2 and 4 Langford; No. 2 Harris.

Stanton Oil Co.'s No. 2 Sudderth.

Prairie Oil & Gas Co.'s No. 1 Jones; No. 1 A. J. Jones; No. 1 C. J. Jones.

Texas & Pacific Coal & Oil Co.'s No. 1 Hefley; No. 2 Lippe.

Gulf Production Co.'s No. 4, 5 and 6 Sherman.

Ranger-Memphis Oil Co.'s No. 1 Sudderth.

Ranger Texas Oil Co.'s No. 1 Frazier.

Mid-Kansas Oil & Gas Co.'s No. 1 McClure.

Manhattan Petroleum Co.'s No. 2 and 3 Hall.

Bankers Oil & Gas Co.'s No. 1 Walker.

Rock Island Oil Co.'s No. 1 Ackers.

Sapulpa Refining Co.'s No. 1 Ball.

Texas Railroad Commission Calls For Co-operation of All Shippers

THE Texas Railroad Commission has formulated a plan for the more expeditious movement of freight, following its hearing in Fort Worth October 4, at which time it was developed that a number of causes are contributory to the delay in moving freight into the oil fields, and the handling of the agricultural products of the North Texas districts. The commission's plan calls for the prompt loading of cars when placed for this purpose, the prompt unloading of cars at destination, the loading of cars to maximum capacity, and the prompt movement of cars by the roads when loaded.

Statement by Commission

The text of the commission's statement follows:

"Because of her wonderful crops of all kinds this year, together with the intensive development of the oil industry in certain sections requiring railway equipment of various kinds, Texas faces a car shortage which promises a serious menace to the agricultural and commercial interests of the state. Wheat, our principal food commodity, is rotting in the fields for want of cars. There has been a wonderful small-grain production in Northwest Texas, which must now be moved. Your coal dealer tells us that the fuel scarcity is due to our car shortage, etc.

"Since the signing of the armistice ending hostilities in the world war, there has been a tendency to relax and resume the easier methods of former peace times. The great emergencies of reconstruction now demand a spirit of co-operation among all people as important to our welfare as winning the war. Getting the maximum service out of our transportation facilities is one of the large ways in which the people as a whole can secure large profits since every one is more or less directly affected by this agency. The railroads being public service agencies, owe certain duties to the public and in turn the public owes certain duties of co-operation to those who are operating the public utilities, if from no other motive the selfish one of helping the general cause by individual effort, thereby helping themselves.

"There are four ways in which greater efficiency may be had in the use of our railroads in the matter of use of cars, namely:

"1. The prompt loading of cars when placed for loading.

"2. The prompt unloading and release of cars.

"3. Loading cars to maximum capacity.

"4. The prompt movement of cars by the railroads when in their charge.

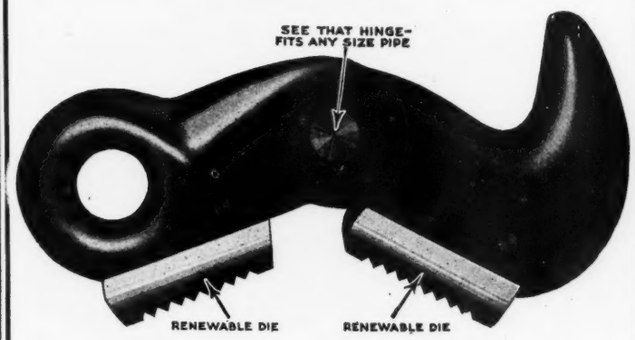
Co-operation Is Urged

"The first three ways mentioned are entirely within the powers of shippers and consignees of freight, and the fourth is entirely within the powers of the railroads, but in a measure dependent upon the co-operation of the shipper and consignee of freight in avoidance of diversion, or reconsignment placing orders at nearest available source, proper loading of cars to avoid stopping in transit to adjust loads, etc.

"The Railroad Commission of Texas, therefore, earnestly calls upon every citizen to aid by the means suggested in making it possible to furnish equipment for the vast amount of business to be moved in Texas during the remainder of this year."

THE NOR-BRO
Never-Slip Pipe Grip

Patent Applied For



LIST PRICE EACH, $10.00

One size only covers the entire range of pipe. Dies are interchangeable with Trimo or Cochran 36-inch pipe wrench dies. Will last a lifetime. A tool of perpetual service. Heavy tool steel center hinge pin, Renewable dies.

CAN BE PURCHASED AT ANY SUPPLY STORE

NORRIS BROTHERS
Robinson, Illinois

ODEE PIPE

Four Sizes—3-inch, 3½-inch, 4-inch and 6-inch
FOR IMMEDIATE DELIVERY

A second-hand pipe of merit, made of lap weld steel, especially adapted for gathering lines and suction lines in connection with casing head gasoline plants

COST

Is less than half of new, and will serve the purpose equally as well

RE-ORDERS

Mean satisfied customers. Our records will prove we deliver the grade. Can we furnish any more conclusive proof than the largest casing head gasoline plant in the world placed the following orders since May 6, 1919:

May 6.....23,500 feet
May 7.....21,000 feet
June 11.....86,000 feet
August 25.....45,000 feet

We earnestly solicit your first order for the re-orders to follow

JOS. GREENSPON'S SONS
IRON & STEEL CO.
ST. LOUIS, MO.

FOR GASOLINE EXTRACTION AND GAS PUMPING

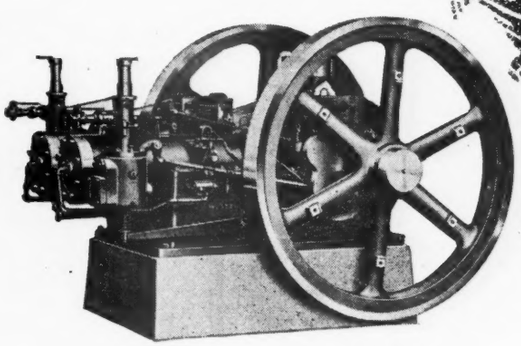
WESTERN MACHINERY COMPANY

-WESTERN- ENGINES
EFFICIENT DEPENDABLE POWER

Especially adapted to gasoline extraction and gas pumping because of their simplicity, better balanced no-belt-shock construction, individual cylinder control, complete accessibility and ease in handling, as well as their high efficiency and fuel economy.

"Western" Duplex and Twin-Duplex Engines are built in sizes from 80 to 320 H. P. two and four cylinder units, and operate on natural and producer gas, kerosene, gasoline and low gravity fuel oils.

Send for Bulletin HT11, stating size and type required.



"Western" Duplex Engine

Western Machinery Co.
900 N. Main St. Los Angeles, Cal.

SHUT DOWN AT ELECTRA.

Practically the entire Electra field has been shut down during the past week as a result of rains and floods. Roads are almost impassable in many cases. No completions are reported. Production for the week dropped somewhat, going down for the first time in a considerable period below 10,000 barrels daily. Production was divided about as follows:

	Barrels
Texas Company	4,500
Magnolia Petroleum Company	3,600
Gulf Production Company	700
Miscellaneous	900
Total	9,700
Last week	10,200

TEXAS COMPANY GETS GAS WELL

The Texas Company has completed a gas well making 31,000,000 cubic feet of gas daily, at its No. 9 Martin, three and a half miles southwest of Petrolia. The well was brought in at 1730 feet. This well may mean that a new gas field has been found in the district, since it is a mile and a half from the limit of the old gas field. It is the largest gasser which has been brought in in North Texas in a number of years. Several months ago the Texas Company brought in a gasser on the same tract making 12,000,000 cubic feet.

The well has caused considerable comment because of the fact that the supply of natural gas in the district was running low and no new wells with a large flow had been found. The new well has been connected to the gas main and the gas sold to fuel gas companies.

ELECTRA DRILLING REPORT

Acme Oil Co.'s No. 2 Burnett, shut down, 519 feet.

Burk Payton Oil Co.'s No. 1 Payton, shut down, rain, 1795 feet; Burk Dome Oil Co.'s No. 1 Burnett, shut down, 1127 feet; Big Beaver Dome Oil Co.'s No. 1 Nance shut down, 1027 feet; Big Chief Electra Oil & Gas Co.'s No. 1 Walker-Krohn, shut down, 445 feet.

Cauble Oil Co.'s No. 1 Dale and 1 Tuttle, floods, 1843-1275 feet; Cloverleaf Oil Co.'s No. 1 Geotze, roads impassable, 595 feet.

Electra Pipe Line Co.'s No. 1 Allen, shut down, rain, 719 feet.

Greenwood et al.'s No. 2 Fisher, under water 745 feet; Gulf Prod. Co.'s No. 1 Waggoner, cleaning out and 9 Woods shut down account rain.

Hale Pet. Co.'s No. 3 Sol Williams, shut down account rain; Hamilton et al.'s No. 1 Staley, shut down account rain, 2523 feet; T. W. Hamilton et al.'s No. 1 Honaker, shut down account rain; Hazel Burk Oil Co.'s No. 1 Augsperger, shut down, rain, 1295 feet.

International Pet. Co.'s No. 1 Burnett, road impassable, 695 feet.

Roy B. Jones Trustees' No. 8 Burnett, shut down, 95 feet.

Lucky Bill Oil Co.'s No. 1 McCarty, roads impassable, 675 feet.

Montana Electric Oil Co.'s No. 1 Fisher, shut down, 755 feet; Magnolia Pet. Co.'s Nos. 31 Piper, 8, 37, 38, 39 and 41 Sumner and 37 and 39 H. & T. C., roads impassable.

North Mid Tex Oil Co.'s No. 1 Roberts, shut down, 895 feet; New Mexico Oil Co.'s No. 1 Douglass, floods, 145 feet.

Phoe Tex Oil Co.'s No. 1 Cross, shut down, 195 feet; Panhandle Ref. Co.'s No. 3 Geotze, shut down, 812 feet.

Red River Oil Co.'s Nos. 92 and 93 Bywaters, shut down, rain; Ramsey et al's No. 1 Honaker, shut down, 590 feet.

Sunshine Slope Oil Co.'s No. 1 Goetze, shut down, 810 feet.

John Tolbert Oil Co.'s No. 2 Coleman, roads impassable, 670 feet; Texhoma Oil & Ref. Co.'s No. 1 Burnett, no report account floods.

West Electra Oil Co.'s No. 1 Huff, fishing, 515 feet; Wisconsin Oil & Dev. Co.'s No. 9 Ward and Todd, shut down, 1045 feet.

6666 Oil Co.'s Nos. 8 and 9 Burnett, shut down, 735-245 feet.

Ajenda Oil Co.'s No. 1 Burnett, shut down, 1335 feet.

Leek-McGann Oil Co.'s No. 1 Bonham, shut down, rain, 715 feet.

Southwest Pet. Co.'s No. 4 Ward and Todd, shut down, 715 feet.

45 ACRES SOLD FOR $3,500,000

J. I. Staley of Wichita Falls has sold 45 acres of his holdings in the northwest Burkburnett field for $3,500,000 to a syndicate of eastern capitalists, according to information in Wichita Falls. Mr. Staley has been in New York for some time. The land sold consists of three 10 and one 15 acre tracts, all of which have production. The exact location of the holdings sold was not announced.

WILDCAT TEST CAUSES FLURRY.

Stock in the Kemp, Munger & Allen Company, which is drilling a deep test on the Munger ranch, near Iowa Park, jumped last week from below par to $500, from which point it has gradually fallen to about $250, as a result of rumors that the test was a success. The well is now drilling in a water sand at about 1780 feet. The occasion for the rumor was the finding of a sand which showed some oil, but later proved to have more salt water at about 1663 feet. The test is to be continued deeper. This is the thirteenth water sand which has been struck in the well.

OIL TRAIN LEAVES TRACK

A derailment occurred Oct. 12 on the Wichita Falls & Northwestern, six loaded tank cars leaving the track near Frederick, Okla. The track was cleared in a short time. The derailment was due to soft track caused by recent rains.

NO COMPLETIONS AT IOWA PARK.

Iowa Park was thrilled last week by reports from the Kemp, Munger & Allen test on the Munger ranch. This test, which is going after deep sands, has at different times found sands with more or less oil, but these have in practically all cases turned out to be salt water sands. It was so with the last one discovered last week at about 1700 feet, and reported at first to be an oil sand. However, the well is to be continued to the 2000 foot depth, because the company feels encouraged by the showing. There is also a likelihood that another deep well will be drilled on the same tract. There were no completions reported this week at Iowa Park. The field has been hampered like all those in North Texas by the heavy rains. Daily production for the week averaged about 575 barrels.

The Van Every Horning & Co.'s No. 1 Van Loh farm, northwest of Iowa Park, is now underreaming at 773 feet. This is to be a deep test.

SKYLINE TEST SHOWS OIL.

The well of the Skyline Oil Company, drilling in the north part of Block 819, may extend the limits of the field more than a mile northwest. This well had been considered dry, but on drilling deeper a sand was found, at about 1785 feet, which gives a showing of oil. Recent rains and high water has made it impossible to complete the well or test it thoroughly. Oil and water are standing in the well about 300 feet deep.

RIVER BED DERRICK LOST

The derrick of the Nacogdoches Oil Company in the bed of the Red River was washed away by high water, according to reports from the Burk-Waggoner field last week.

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Library Bureau
Card and filing systems
Founded 1876
Filing cabinets wood and steel
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Salesrooms in 49 leading cities of the United States, Great Britain and France

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Should be willing to render conscientious service. We do not neglect our transient or out of town customers. LET US BE YOUR BANKERS.
The Wichita State Bank & Trust Co.
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LESTER JONES, Cashier
W. L. STEWART, Assistant Cashier
I. W. KARRENBROCK, Assistant Cashier

—the homes of a city are the real mark of its development progress and belief in the future—

E. R. Brown of the Magnolia Petroleum Co. has a beautiful home on Swiss Avenue

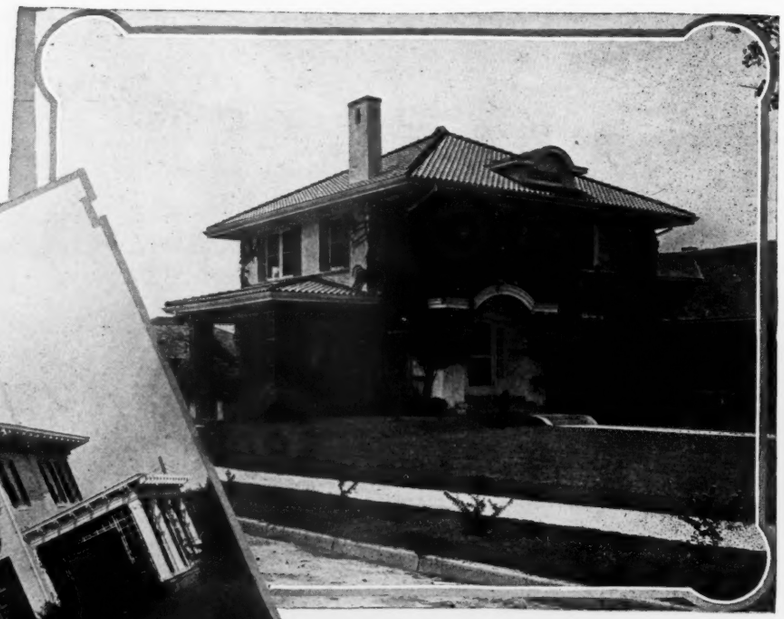
Stratford Avenue, where the residence of J. Edgar Pew of the Sun Company is located, has many comfortable homes.

W. B. Tucker, a well known producer, is at home to his friends on Maplewood

DALLAS

Chamber of Commerce & Mfgrs. Assn.
Dallas, Texas

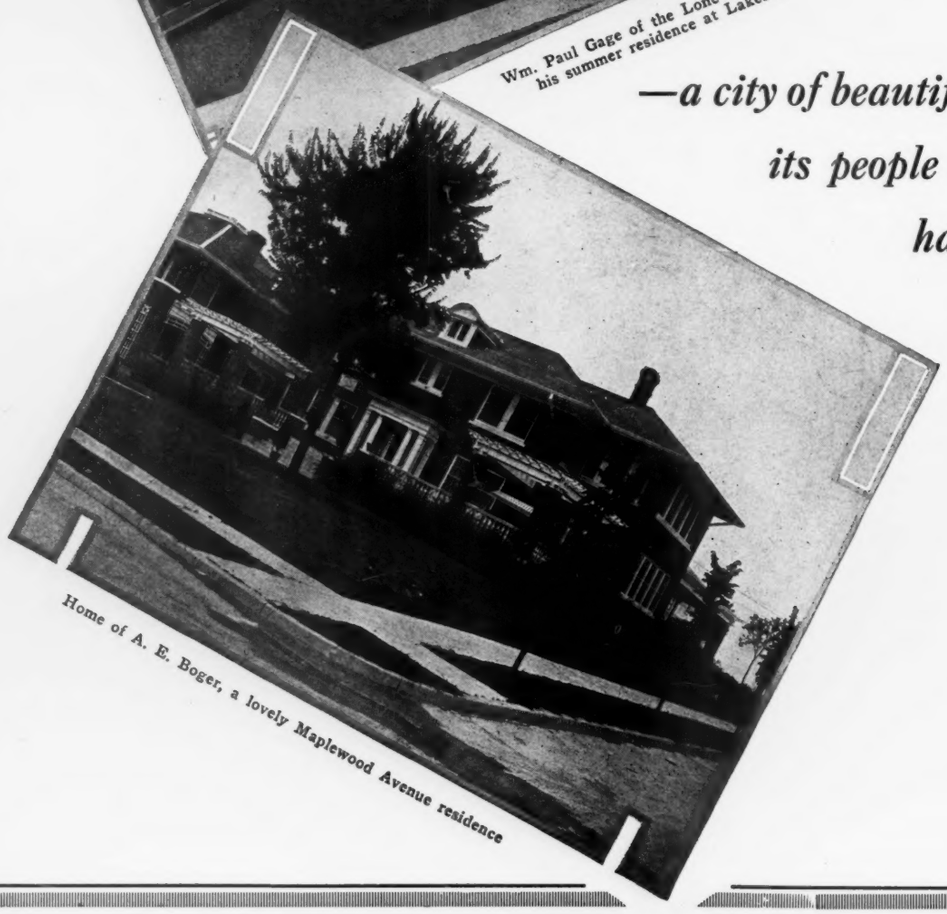
Chamber of Commerce & Mfgrs. Assn.
Dallas, Texas



The beautiful home of W. P. Clements, on Maplewood

Wm. Paul Gage of the Lone Star Gas has his summer residence at Lakeside

—a city of beautiful homes means that its people have prospered and have built into the city permanent proofs of their contentment and prosperity—

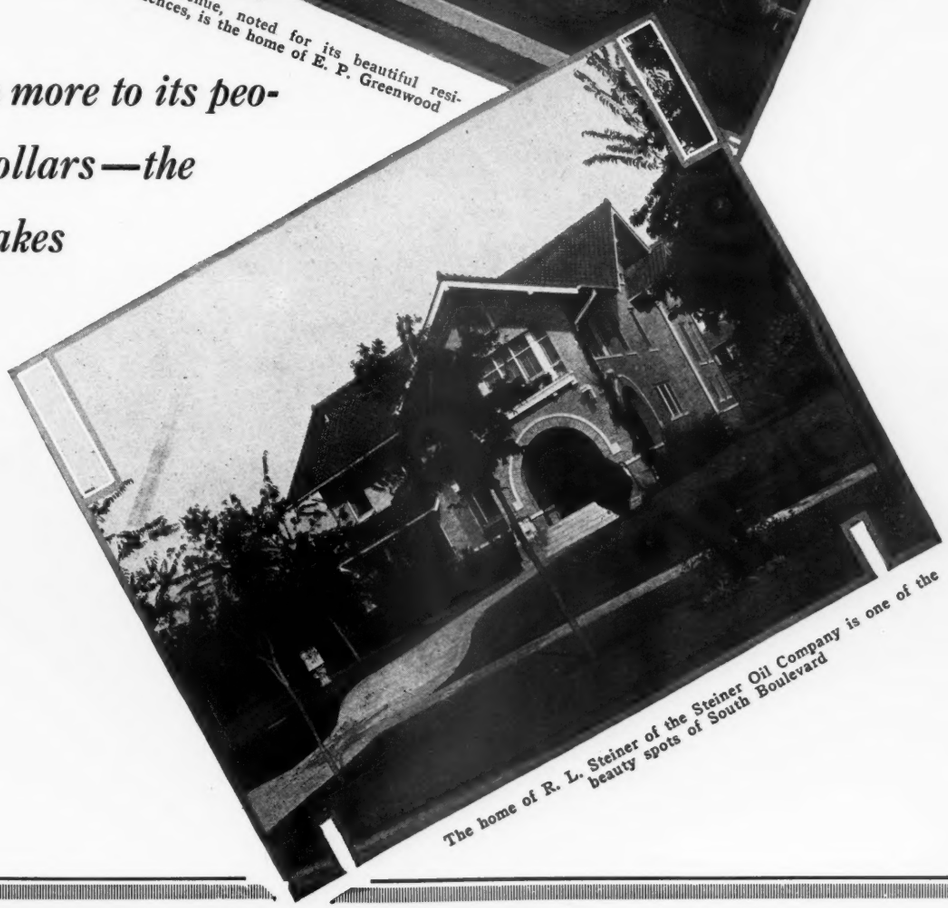


Home of A. E. Boger, a lovely Maplewood Avenue residence

Frank M. Smith of the Oriental Oil has one of the finest residences on Forrest Avenue—a street of fine homes

Swiss Avenue, noted for its beautiful residences, is the home of E. P. Greenwood

—a city should mean more to its people than wealth in dollars—the strength of a city makes its best expression thru the homes its people build in a city they believe in—



The home of R. L. Steiner of the Steiner Oil Company is one of the beauty spots of South Boulevard

DALLAS

Chamber of Commerce & Mfgrs. Assn.
Dallas, Texas

Fred M. Lege, Jr., of the Lone Star Gas, has his beautiful home on Swiss

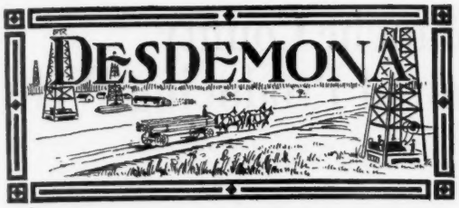
DALLAS

Chamber of Commerce & Mfgrs. Assn.
Dallas, Texas

The Beverly Drive home of A. C. Bole of the Magnolia Petroleum Company

—a home of your own whether a cottage or palace should have the surroundings that a comfortable, happy city can supply—

—real homes and beautiful surroundings make success worth while—



DESDEMONA PRODUCTION

The average daily production of the Desdemona field is divided approximately as follows:

	Barrels
Magnolia Petroleum Co.	4,355
Texas Company	1,380
Mid-Kansas Oil & Gas Co.	1,756
Sun Company	594
Sinclair Gulf Oil Co.	80
Humble Oil & Refining Co.	5,076
Miscellaneous	16,470
Total	29,711
Last week	32,300
Previous week	30,630

DESDEMONA COMPLETIONS.

Desdemona Oil Co.'s No. 1 Miller was shot with 240 quarts at 3420-3500 feet, and again with 40 quarts at 3520-3540 feet, and is abandoned in the Ellenberger Lime.

Copperas Creek Oil Co.'s No. 1 Fisher is finally abandoned.

Comanche Northern Oil Co.'s No. 3 Carruth is completed for a gasser at 2718 feet.

Midlothian Oil Co.'s No. 1 Madding is a 300-barrel well at 2738 feet, and the No. 2 Madding is making 50 barrels at 2725 feet.

Southwestern Oil Co.'s No. 5 Madding is a 1000-barrel well at 2725 feet.

Magnolia Petroleum Co.'s No. 2 Echols Estate is completed for 450 barrels a day at 2732 feet.

Plains Oil and Gas Co.'s No. 1 Lewis is a 250-barrel well at 2890 feet.

Humble Oil and Refining Co.'s No. 9 Ellison is a 200-barrel well at 2696 feet.

J. Crosby's No. 9 Putty is making 1200 barrels at 2730 feet.

Magnolia Petroleum Co.'s No. 1 W. R. Carruth was drilled to 2687 feet, and increased to 1800 barrels a day. It has been producing for about three weeks.

Tex-Penn Oil Co.'s No. 1 Moorman is making 25 barrels at 2970 feet.

WELLS NEAR COMPLETION IN THE DESDEMONA SECTION.

Atlantic Oil Producing Co.'s No. 1 Kinnison is making 10 million feet of gas at 2868 feet.

Transcontinental Oil Co.'s No. 1 Lewis is cleaning, after a shot at 2600 feet.

Magnolia Petroleum Co.'s No. 5 Odle is making 20 million feet of gas at 2656 feet. No. 1 Ellison is making 5 million feet of gas and setting casing at 2793 feet.

The Texas Co.'s No. 2 Praeter is cleaning after a shot and making 10 million feet of gas at 2769 feet.

Magnolia Petroleum Co.'s No. 9 Terrell is gassing at 2686 feet and drilling.

Gulf Production Co.'s No. 6 Prater is gassing, and shut down at 2320 feet. No. 7 is cleaning after a shot at 2714 feet, and standing full of oil. No. 8 is cleaning, after a shot at 2700 feet.

The Texas Co.'s No. 9 Grice is moving back the boiler, at the top of the pay, at 2728 feet.

Humble Oil and Refining Co.'s No. 4 Davis is at the top of the pay at 2661 feet.

Southern California Oil Co.'s No. 1 Whalock is shut down for storage at 2730 feet.

Magnolia Petroleum Co.'s No. 5 Carruth is shut down for connections at 2661 feet.

Magdolene Oil Co.'s No. 1 Spratling had a showing of oil at 531 feet, good for about one barrel, and is drilling at 1250 feet.

Plains Oil and Gas Co.'s No. 14 Herrington is a salt water well at 2760 feet.

The Humble Oil and Refining Co.'s No. 1 Dunn in the Sipe Springs field, is ready to begin fishing job at 2750 feet, with the fishing tools on the ground.

COMANCHE COUNTY DRILLING REPORT.

Collins & Gillette's No. 1 Sturkie shut down, 2982 feet.

Magnolia Petroleum Co.'s No. 2 Duke shut down; No. 1 Genoway, drilling 3210 feet; No. 1 Hankins, drilling 2735 feet; No. 5 Terrell, drilling 2200 feet; No. 1 Miller, drilling 2225 feet; No. 3 Echols, drilling by tools 2700 feet; No. 7 Terrell, drilling, 2425 feet; No. 2 Carruth, drilling, 2975 feet; No. 5 Carruth, shut down, 2661 feet; No. 2 Moorehead, drilling, 1832 feet.

Comanche Queen Oil Co.'s No. 1 Rigby, shut down with 2 strings of tools in the hole.

Tex-Penn Oil Co.'s No. 1 Lewis, cleaning out after shot, 2600 feet.

Comanche Northern Oil Co.'s No. 1 W. A. Harris, rig.

Ertell Oil Co.'s No. 1 Terry, fishing, 2400 feet.

Peerless Oil Co.'s No. 2 Carruth, drilling, 1200 feet.

Cosden Oil & Gas Co.'s No. 4 Carruth, skidded rig.

Tex-Penn Oil Co.'s No. 1 Koonce, shut down 3200 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Wilson, rig.

Tex-Penn Oil Co.'s No. 2 Snodgrass, shut

Oil men!

Buy your permanent home in DALLAS

The homes of a few of the oil men in Dallas, pictured on the preceding pages, show what they think of this city as a permanent home place.

This Bank has a large Real Estate Department, with eight experienced and courteous salesmen, specializing in the different sections of the city.

We have sold fine homes to a large number of oil men, and prospective purchasers will find it to their interest to deal through this large and responsible Bank in buying a Dallas home.

Information promptly and cheerfully given whether you buy or not.

Other Departments: Checking and Savings Accounts, Safe Deposit Vaults, Investments (High Grade First Mortgage Notes and Bonds), and Trust Department.

Dallas Trust & Savings Bank

DALLAS, TEXAS

Capital $1,000,000 Resources $5,500,000

down, 2700 feet, for fuel; No. 1 Peak, drilling 2550 feet; No. 1 Shearer, shut down for wire line, 3052 feet; No. 1 Guthrie, drilling, 2150 feet.

Dividend Oil Co.'s No. 2 Terry, rig.

Ertell Oil Co.'s No. 3 Terry, rig.

Equitable Oil Co.'s No. 1 Horn, timbers.

Pate Oil Association's No. 1 Pate, shut down, 1200 feet.

Martin Oil Co.'s No. 1 Fielder, rig.

Texas Pet. Co.'s No. 1 Cox, timbers.

Sipe Springs Oil Co.'s No. 1 Hadley, rig.

Fisher & Gilliland's No. 1 Poteet, rigging up.

McMann Oil Co.'s No. 2 Reynolds, drilling, 2450 feet.

Cosden Oil & Gas Co.'s No. 7 Carruth, rig.

Humble Oil & Ref. Co.'s No. 1 Small, underreaming, 900 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Kimball, drilling, 875 feet.

Dickerson et al.'s No. 1 Wasson, drilling, 3910 feet.

Humble Oil & Refining Co.'s No. 1 Barton, shut down for repairs, 2640 feet; No. 2 Goss, fishing.

McMann Oil Co.'s No. 2 Terry, rig.

Flynn et al.'s No. 1 Waldrop, drilling, 1600 feet.

Black Lime Oil Co.'s No. 1 Pettit, setting casing, 1580 feet.

Atlantic Oil Producing Co.'s No. 1 Lusk, rig; No. 1 Watkins, drilling, 1100 feet.

Texas Co.'s No. 2 Grice, rig.

Tex-Penn Oil Co.'s No. 2 Lewis, shut down for new tools.

Magnolia Petroleum Co.'s No. 3 Odle, rigging up; No. 5 Odle, drilling, 2656 feet.

Halleck & Whaley's No. 1 Thompson, drilling, 700 feet; No. 2 Thompson, drilling, 1950 feet; No. 3 Thompson, rig.

Royal Duke Oil Co.'s No. 2 Smith, shut down for casing, 2600 feet.

Gulf Production Co.'s No. 2 Praeter, preparing to make a shot; No. 3 Praeter, fishing for casing.

Atlantic Oil Producing Co.'s No. 4 Vaught, location; No. 5 Vaught, drilling, 3110 feet; No. 7 Vaught, location.

Crowell & Grant's No. 2 Cypert, location.

Humble Oil & Refining Co.'s No. 4 Davis, drilling, 2756 feet; No. 4 Davis, drilling, 1175 feet; No. 6 Ellison, drilling, 1810 feet; No. 6 Ellison, drilling, 2425 feet; No. 10 Ellison, drilling by tools, 1150 feet; No. 8 Ellison, drilling, 2425 feet; No. 1 Davis (acc't B), fishing, 2664 feet; No. 4 D. S. Davis, setting casing, 2662 feet.

Texas Duke Oil Co.'s No. 1 Bronstock, shut down, 2900 feet.

Union Oil Prod. Co.'s No. 1 Harrell, drilling, 2170 feet.

Bosque Oil Co.'s No. 1 Davis, shut down, 2600 feet.

Plains Oil & Gas Co.'s No. 1 Dess, shut down, 750 feet.

Burmasal Oil Co.'s No. 1 Lewis, drilling, 2260 feet.

Ross Sanders & Moorhead's No. 2 Moorhead, drilling, 2050 feet.

Duke Knowles Annex Oil Co.'s No. 2 Vera, drilling, 2290 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Y. L. Dabney, drilling, 2350 feet.

Arizona Oil Co.'s No. 1 Foote, drilling, 2640 feet.

Central Oil & Dev. Co.'s No. 2 Bearden, setting casing, 2620 feet.

Central Oil & Dev. Co.'s No. 1 Brown, drilling, 3055 feet.

Gulf Production Co.'s No. 6 Praeter, shut down for gas, 2420 feet; No. 7 Praeter, cleaning after shot; No. 8 Praeter, cleaning after shot, 2700 feet.

Magnolia Petroleum Co.'s No. 1 Woodard, drilling, 2000 feet.

Texas Co.'s No. 9 Grice, moving back boiler, 2728 feet; No. 10 Grice, drilling, 175 feet; No. 11 Grice, drilling 2000 feet; No. 12 Grice, rig; No. 13 Grice, timbers; No. 14 Grice, rig.

Skelly & Sankey's No. 1 Mires, drilling, 2660 feet.

Gulf Production Co.'s No. 1 Jones, drilling, 550 feet.

Hogg Creek Oil Co.'s No. 1 Eppler, rig.

Smith & Guggins No. 1 Smith, rig.

H. W. Harris No. 1 Bearden, shut down, 875 feet.

Southern California Oil Co.'s No. 1 Whalock, shut down for tankage, 2730 feet.

Andrews & McClintock's No. 1 Smith, cleaning out, 2845 feet.

Plains Oil & Gas Co.'s No. 14 Herrington, trying to mud off water.

Cosden Oil & Gas Co.'s No. 3 Hamilton, drilling, 350 feet.

Mary Elizabeth Oil Co.'s No. 2 Henderson, drilling, 800 feet.

Ohio Cities Oil & Gas Co.'s No. 1 Vaught, timbers.

Skelly & Sankey's No. 2 Anderson, timbers.

Disney & Cole et al.'s No. 3 Terry, trying to shut off water, 2660 feet; No. 4 Terry, drilling, 1940 feet.

Cosden Oil & Gas Co.'s No. 6 Hamilton, drilling, 2675 feet.

Sun Company's No. 6 Shuler, drilling, 2060 feet; No. 2 Mohon, rig; No. 1 Townsend, rig; No. 1 Anderson, drilling, 1185 feet; Nos. 2, 3 and 4 Anderson, are rigs; No. 1-A Farmers St. Bk., rig; No. 1-B Farmers St. Bk., rig; No. 1 Moore, drilling, 250 feet; No. 1 King, timbers; No. 1 Waldroff, location.

Hogg Creek Pool in Comanche County Boasts Two Hundred Producing Wells

A YEAR ago there was one well producing on the Duke tract in the northeastern corner of Comanche County, with the rig burned, and the flow from the well registering about 300 barrels a day. Now there are more than 200 wells producing in the same section, with a daily average of 30,000 barrels, and a past record of 48,000 barrels a day.

This has been one of the most rapidly developed fields of the country, considering the depth of the producing sand, and the inaccessibility of the field to bases of supplies.

The Duke Sand, so called from the fact that it was first found on the Duke lease of the Tex-Penn Oil Company, now the Transcontinental Oil Company, is found at about 2700 feet, and is the same producing horizon that has yielded the bulk of the oil from the Ranger field. The whole country is covered with heavy sand beds, making it difficult to move freight, and all materials have to be hauled 10 or 15 miles from railroad points.

Townsite Produces Its Share.

In spite of these difficulties the field has been rapidly developed, and that largely within the last nine months. Most of the production has come from the extensions north and west, in Eastland County, and the townsite of Desdemona has produced its share of oil.

With 200 wells producing, owned by half as many companies or individuals, there has been an average of more than 20 wells a month completed, and this average is still being maintained, although the production of the field is now on the decline. There are about 200 wells now drilling, including the rigs and locations, in the field.

The development of this field has made many land-owners and individuals financially independent. The fact that the acreage was not leased by the producing companies, and the further fact that it is a country where the land was owned by many small property holders in small blocks, gave an opportunity for any number of new companies and individual operators. They paid sucker prices for the acreage, and some of them actually made money out of it, in spite of the fact that they paid more than the leases were worth, and were at enormous expense for development. The low percentage of failures in the field was in favor of the small operators, and the ease of drilling made for rapid completion of wells. In fact everything was in favor of the producers, except storage capacity. This has not materially hindered development, and at present is well taken care of by the larger pipe line companies.

Field to Hold Up Well.

Desdemona will be a field for many months yet. The fact that the daily production has recently declined is only what might have been expected in the light of the congested drilling in the townsite. The larger leases outside of the town have not been drilled up, and will not be for some time. The field is spreading out in three directions, and it is not at all impossible that other valuable extensions will be added. It is certain that the field will be productive for many months, and will materially contribute to the output of light oil from West Texas.

Railroads building into the district will facilitate the shipment of supplies, and the larger companies with good acreage yet undeveloped are expected to produce a lot of oil from the Desdemona field during 1920.

FILES INCORPORATION PAPERS

The Stephenville-Desdemona Oil Railway Company has been incorporated for $250,000, and will build 22 miles of narrow gauge road between Desdemona and Stephenville, Texas. It is said that an effort will be made to have the road in operation by Jan. 1st.

At Stephenville, this short line will connect with the Frisco running from Fort Worth to Brownwood, and south. It will thus bring the Desdemona field into direct connection with Fort Worth, Dallas and other cities, by rail.

The building of this road has been inaugurated to offset the advantage which the new town of Jakehamon will have, to the south of Desdemona. Jakehamon is to have railroad connections with Ranger and the north, by the construction of a new line now under way, and the town of Desdemona saw that it would have to offset this advantage, or move.

RANGER MAY HAVE BIG LIGHT PLANT

One of the biggest light and power companies in the south is negotiating for a 35,000 horse power plant for Ranger, according to an announcement of M. H. Hagaman, mayor of Ranger, recently . The plant will be for the lighting of the town, and for power in the oil fields.

It is also planned by the company to furnish power from Ranger for nearby towns in the oil country.

STATE FILES SUIT

The State filed suit in Travis County Tuesday for the recovery of seven and a half acres of land in Eastland County and damages amounting to $250,000, together with an order forcing the defendants from further operation on three wells. The defendants are the Prairie Oil & Gas Co. and L. P. Cunningham. The value of the oil already produced is estimated at $200,000. B. D. Townsend of Denver, Colo., holds a permit to prospect on this strip, which is alleged to be vacant land.

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Desdemona Wells Made Average Daily Flow of 36,340 Barrels in September

THERE were 197 completed wells in the Desdemona field that showed production, up to October 1. During the last week in September these wells made a total flow of 36,340 barrels daily. They have been declining rapidly since that time, especially the wells in the townsite.

The following table gives every producing well in the field as of October 1, and its record during the last week in September:

Company	Lease	No. of wells	Production
Atlantic Oil Prod. Co.	Vaught	2	150
Andrews & McClintock	Smith	1	10
Beaver Valley Oil Co.	Terry	2	550
Bosque Oil Co.	Gray	1	530
Cattlemen's Hogg Creek	Bearden	2	220
Central Oil Dev. Co.	Bearden	1	30
Central Oil Dev. Co.	Brown	1	20
Comanche Central Oil Co.	Terry	2	580
Comanche County Oil Co.	Terry	2	400
Comanche Gusher Oil Co.	Echols	1	10
Comanche Home Oil Co.	Brown	1	260
Comanche Northern	Carruth	1	1300
Continental Oil Co.	Terry	2	120
Crosby et al	Putty	5	1150
Cosden Oil & Gas Co.	Carruth	3	250
Cosden Oil & Gas Co.	Hamilton	1	850
Connely & Aguire	Eppler	1	10
Del Tex Oil Co.	Lynn	1	5
Del Tex	Dabney	1	24
Disney & Cole	Terry	2	475
Dixie Oil & Gas Co.	Hamilton	1	320
Duke Consolidated Oil Co.	Terry	1	180
Duke Consolidated Oil Co.	Haynes	1	40
Duke Dome Oil Co.	Snodgrass	1	80
Duke Extension	Carruth	1	10
Duke Knowles Annex	Vera	1	40
Pullman Oil Co.	Daniels lot	1	10
Erath Duke Oil Co.	Terry	1	30
Wirt Franklin	Lacy	2	190
Gallager & Lawson	Dabney	1	270
Green-Wood-Terrell	Town lot	1	40
Gulf Production Co.	Praeter	4	950
Jake Hamon	Bowles	1	..
Jake Hamon	Town lot	1	10
Bay City Oil & Gas Co.	Lewis heirs	1	70
R. O. Harvey	Ballard	2	5
S. B. Herndon	Terry	3	260
Henderson Gas Co.	Town lot	1	80
Humble Oil & Refining Co.	D. C. Davis (A)	2	1630
Humble Oil & Refining Co.	E. S. Davis (A)	2	40
Humble Oil & Refining Co.	E. S. Davis (B)	1	1340
Humble Oil & Refining Co.	Ellison	5	4160
Humble Oil & Refining Co.	Dick Gray	4	20
Humble Oil & Refining Co.	Moorman	1	75
Humble Oil & Refining Co.	Stockton	1	10
Jefferson Oil Association	Mowell	1	10
Leon Valley Oil Co.	Haynes	2	60
Little Giant Oil Co.	Terry	1	30
Lone Star Gas Co.	Rushing	1	10
Lucky 13 Oil Co.	Lewis	1	10
McMann Oil Co.	Reynolds	1	1500
Manhattan Oil Co.	Town lot	1	5
Magnolia Petroleum Co.	Bearden	1	25
Magnolia Petroleum Co.	Berry	1	20
Magnolia Petroleum Co.	Carruth	1	225
Magnolia Petroleum Co.	Davis	1	10
Magnolia Petroleum Co.	Duke	1	120
Magnolia Petroleum Co.	William Echols	1	350
Magnolia Petroleum Co.	Echols estate	1	1500
Magnolia Petroleum Co.	Hobbs	1	18
Magnolia Petroleum Co.	Foote	1	5
Magnolia Petroleum Co.	McArthur	1	900
Magnolia Petroleum Co.	Moorehead	1	7
Magnolia Petroleum Co.	Odle	2	6
Magnolia Petroleum Co.	Sparks	1	2
Magnolia Petroleum Co.	Terrell	4	1350
Magnolia Petroleum Co.	Woodard	1	5
Vic Martin	Town lot	1	200
Marigold	Hogg	2	17
Mary Elizabeth	Brown	1	700
Mascho et al	Town lot	1	700
Mid-Kansas Oil & Gas Co.	P. J. Dabney	2	510
Mid-Kansas Oil & Gas Co.	Davis	1	5
Moore et al	Moore	2	750
Nuttle Derby Oil Co.	Stemmons	1	310
Ohio Gas & Fuel Co.	Herrington	2	90
Peerless Oil & Gas Co.	Carruth	1	50
Phoenix Oil Co.	Clayton	1	6
Plains Oil & Gas Co.	Herrington	6	760
Plains Oil & Gas Co.	Lewis	1	10
Plains Oil & Gas Co.	Stockton	1	5
Ranger Rock Island	Brown	1	410
Riley Drilling Co.	Town lot	1	..
Ross, Sanders & Moore	Moorehead	1	120
Royal Duke Oil Co.	Smith	1	10
Powers interests	Thornton	1	10
Rosedale Oil Co.	Bearden	1	10
Sinclair Gulf Oil Co.	Hogg	5	105
Sinclair Gulf Oil Co.	Sloan	1	20
Skelley & Sankey	Anderson	1	2350
Skelley & Sankey	N. Corbett	1	11
Skelley & Sankey	Hogg	5	40
Skelley & Sankey	Town lot	1	115
Southland Oil Co.	Vaught	2	120
Southwest Oil Co.	Haynes	1	10
Southwest Oil Co.	Praeter	3	430
Southwest Oil Co.	Stockton	1	10
Sterling Oil Co.	Vaught	2	300
Sun Company	Shuler	5	500
Sun Company	Mohon	1	20
Tennessee Oil & Gas Co.	Town lot	1	80
Texas Company	Grice	1 to 6	..
Texas Company	Grice	7	1200
Texas Company	Praeter	1	50
Texas Company	Wilson	1	6
Texas Duke Oil Co.	Brown	1	5
Taylor Oil Co.	Town lot	1	10
Texas Drilling Co.	Queen	1	960
Texas Okla. Oil & Dev. Co.	Town lot	1	1450
Tex-Penn Oil Co.	Lewis	1	10
Tex-Penn Oil Co.	Duke	2	60
Tex-Penn Oil Co.	Knowles	3	150
Tennessee Oil Co.	Terry	1	160
Union Oil & Refining Co.	Town lot	3	350
Walden Oil & Gas Co.	Town lot	1	10
Warren Wagner	Terry	2	150
S. Wagner & Stovall	Town lot	2	10
Waxahachie Oil Co.	Thompson	3	10

TRINITY RIVER PROJECT APPEARS FAVORABLE

The Board of Army Engineers at Washington has informed Representative Clay Stone Briggs of Texas that the lower Trinity river project has been again referred to Colonel Spencer Crosby, district engineer of Galveston, who has been instructed to furnish additional estimates as to the cost of the construction of dams and locks to make the river navigable.

PRACTICE DECLARED UNFAIR.

E. E. Grant, secretary of the Independent Oil Men's Association, has addressed a letter to publications and others interested, relative to the stand taken by the association on case No. 85 before the Federal Trade Commission, commonly known as the "curb pump and tank case." The association approves the action of the trade commission and the following resolution was adopted unanimously by the board of directors of the association last month, stating clearly the stand of the organization:

"Whereas, the Federal Trade Commission in the city of Washington, on July 21st, 1919, entered a final ruling on Docket No. 85 regarding the practice of the Standard Oil Co. of Indiana installing curb pumps and tanks for a nominal consideration and providing that said pumps and tanks so installed are for the exclusive use of the owners or leasors so far as the distribution from them was concerned of their own products, it was ruled that this practice was an unfair method of competition in interstate commerce, in violation of the provisions of Section 5 of an Act of Congress, approved September 26th, 1914, entitled "An Act to Create a Federal Trade Commission, to define its powers and duties, and for other purposes" and are in violation of Section 3 of an Act of Congress approved October 15th, 1914, entitled "An Act to supplement existing laws against unlawful restraints and monopolies, and for other purposes," and that on this conclusion an order was issued to the respondent that they must cease and desist within a period of thirty days after the expiration of the time allowed and giving said respondent four months to so change their agreements that they shall not be incompatible with the spirit and intent of this order.

"Resolved that the board of directors of this association after having taken a referendum vote of its members on this subject, which was overwhelmingly against this practice and in favor of its abolition, endorses and shall urge all its members to respect the final conclusions and ruling of the Federal Trade Commission in regard to this practice."

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Two More Shallow Wells South of the Burk Field; Production Drops

TWO wells have been completed in the new shallow field 3½ miles south of Burkburnett. These were properties of the O. S. Drilling Company and the Texhoma Oil and Refining Company. The first found an oil sand 20 feet thick at 1270 feet and brought in its well for an estimated initial production of 500 barrels. On October 11 this well was swabbed, and in 9 hours made 600 barrels. The second company found its sand ten feet deeper and completed the well with a total depth of 1295 feet. It is estimated that its initial production is 300 barrels. The condition of other tests which have found the same sand in various parts of the field indicates that the new pool will be a highly profitable one.

PRODUCTION IS OFF.

Production for the Burkburnett fields fell off approximately 5000 barrels daily during the past week, dropping to 81,800 barrels. The pipe line runs for the week registered 506,200 barrels. The drop in production is due to the same difficulty which has been holding the field back for some time—lack of transportation. As the heavy rains, which have marked the month to date, have continued relief from this situation continues to be delayed.

During the week 22 wells were reported as being successfully completed, while two were abandoned.

It seems that no week passes in the fields now without its damaging fire. This time the flames passed through a portion of the busiest block in the field, the Elsea tract, Block 88. While this fire was controlled in a short time compared to the other recent blazes, it had time to do damage estimated in the neighborhood of $100,000. A number of small storage tanks and derricks were burned. Some steps very likely are to be taken by producers to organize for fire protection.

EXTENSION INDICATED.

Indications of further extensions of the field are gathered from the finding of the Skyline Oil Company in Block 819, a large part of which has been generally regarded as dry. This company reported striking a sand at about 1785 feet, after the well had been practically abandoned. It is not likely from present indications that the well will be a large one, but the last report is that about 300 feet of oil and water are standing in the hole. The well of the Burk Senator Oil Company in the Red River bed is reported to be standing full of oil. This well can not be completed on account of the floods. It is said, however, that there has been one flow. Receivership proceedings against the company have been brought in both Texas and Oklahoma as a result of the litigation over the title to the river bed acreage.

Roads in the oil fields continue to be practically impassable as a result of the rains. There is very little travel back and forth between Burkburnett and Wichita Falls, and there are almost no supplies being taken out to the wells.

The well of the Henry Ford Oil Company on the Snoddy tract, which has been taken to indicate an extension of the field to the west, is in bad shape. The casing was set originally at 1555 feet. A six-foot oil sand was found at about 1600 feet and as the casing had been set too high water got into the hole. The company has tried to pull the 6⅝ casing and reset it.

BURKBURNETT PRODUCTION DROPS.

Daily production figures for the Burkburnett fields are down again, a drop of approximately 5000 barrels being recorded. Heavy rains, mud and the impossibility of improving transportation facilities are responsible. The production was divided about as follows:

	Barrels
Texas Company	4,750
Magnolia Petroleum Company	3,725
Gulf Production Company	3,100
Humble Oil and Refining Company	2,500
Western Oil Corporation	4,100
Gilliland Oil Company	2,400
Miscellaneous	61,225
Total	81,800
Last week	86,380

COMPLETIONS AT BURKBURNETT.

The following wells have recently been completed in the Burkburnett fields:

Big Ford Oil Co.'s No. 2 Vogel, 1250 barrels, 1776 feet.

Daniels Agency's No. 2 Brannon, 400 barrels, 1733 feet.

Gulf Production Co.'s No. 4 Waggoner, 1000 barrels, 1649 feet; No. 2 Schmisseur, 750 barrels, 1671 feet; No. 1 Waggoner 86, 600 barrels, 1607 feet.

Humble Oil and Refining Co.'s No. 15 Herndon, 15 barrels, 1711 feet; 1 Waggoner, 800 barrels, 1608 feet.

H. J. Smith Oil Co.'s No. 6 Elsea, 750 barrels, 1701 feet.

W. J. Cheley's No. 1 Taylor, 800 barrels, 1607 feet.

Eastland Oil & Refining Co.'s No. 1 Waggoner, 750 barrels, 1609 feet.

Healdton Oil & Gas Co.'s No. 3 Morgan, 500 barrels, 1634 feet.

Jim McMahon's No. 2 Morgan, 1000 barrels, 1567 feet.

Noble & Livingston's No. 6 Waggoner 86, 600 barrels, 1599 feet.

F. Nertz's No. 1 Taylor, 800 barrels, 1605 feet.

Texas Company's No. 19 Morgan, 1250 barrels, 1685 feet.

Langford, Staley & Chenault's No. 2 Vogel, 800 barrels, 1760 feet; 3 Vogel, 800 barrels, 1759 feet; 8 Schmisseur, 1750 barrels, 1740 feet.

John O'Neill's No. 1 Taylor, 2750 barrels, 1676 feet.

D. Rose Oil Co.'s No. 1 Renner, 300 barrels, 1861 feet.

O. S. Drilling Co.'s No. 1 Daniels, 500 barrels, 1262 feet.

Texhoma Oil & Refining Co.'s No. 1 Daniels, 300 barrels, 1295 feet.

ABANDONMENTS AT BURKBURNETT.

The following wells have been abandoned at Burkburnett:

Magnolia Petroleum Co.'s No. 6 Maggie Fowler, abandoned, 1675 feet.

BURKBURNETT WELLS NEARING COMPLETION

The following wells in the Burkburnett fields, practically all of them in the Northwest Burkburnett pool, are below 1500 feet, a large majority nearing completion, and those thus designated (*) have set casing. Most of these wells are shut down on the sand, and will not be completed until transportation improves:

American Ref. Co.'s Nos. *2, *3, *4, 6 and 7 Waggoner and *1 and *2 Evans; Associated Dev. Co.'s Nos. 1 Taylor and 1 Schmisseur; Angus Beard's No. *1 Elsea; Adams et al's No. *3 Elsea; A. B. A. Oil Co.'s No. *1 Brannon.

Blue Grass Oil Co.'s Nos. 1 Vogel and 1 Evans; Burk Dreamer Oil Co.'s No. 1 Taylor; Burk Crest Oil Co.'s Nos. *1 Taylor and *1 Waggoner; Block 84 Oil Co.'s No. *1 Waggoner; Burk Reserve Oil Co.'s Nos. 1 Waggoner and 1 Smith; Burk Fox Oil Co.'s No. *1 Taylor; Banner Oil Co.'s Nos. *1 and *2 Waggoner; Block 88 Oil Co.'s Nos. *2, 3 and 4 Elsea; British American Oil Co.'s No. *1 Brannon; Burk Lucas Oil Co.'s No. 2 Vogel; Burk Cameron Oil Co.'s No. 1 Sparks, drilling, 1560 feet; Burnon-Reubin Oil Co.'s No. *1 Taylor; Borealis Oil Co.'s No. 1 Elsea; Bonita Oil Co.'s No. *1 Taylor, bailing, 1640 feet; Block 89 Oil Co.'s No. *1 Fowler; Burk Harris Oil Co.'s Nos. 1, 1B and 2B Schmisseur; Big Ford Oil Co.'s Nos. *1 and *3 Vogel; Bradley Bros.' Nos. *3, *4 and *5 Vogel; Berklin Syndicate's No. *1 Morgan; Burk Senator Oil Co.'s No. 1 Michna; Burk Bet Oil Co.'s No. *1 Sparks; Barkley-Meadows' Nos. 2, *4, 5 and 6 Vogel; Burk Wonder Oil Co.'s No. 1 Vogel; Burk King Oil Co.'s No. 1 Taylor; Bashara Oil Co.'s No. 1 Taylor; Blair Montgomery Oil Co.'s No. *1 Morgan; W. A. Butts Oil Co.'s No. 1 Evans; Burk Tye Oil Co.'s No. 1 Taylor; Burk-O-Tex Oil Co.'s No. *1 Evans; K. B. Berkland Oil Co.'s No. *1 Morgan; Bennett et al's No. 1 Taylor; Burk Newsom Oil Co.'s No. *1 Evans; and Burk Sheffield Oil Co.'s No. *1 George.

W. J. Cheley's No. *2 Taylor; Capitol Oil Co.'s No. 1 Taylor; Colorado Oil Co.'s No. *1 Taylor; Chenault & Rowe's Nos. *2, 3 and 4 Taylor; Cline & Clarke's Nos. 2, 3 and 4 Taylor; Cary Bros.' No. *2 Elsea; Contractors' Oil Co.'s Nos. 1 and *2 Vogel; Chapman & McMahon's Nos. 2, 3 and 4 Taylor; Clark & Grey Oil Co.'s Nos. *3 and 4 Taylor; Cannon & Hobbs' No. 2 Taylor; Clark, Olsan & Whaley's Nos. *2, 3 and *4 Morgan; Chapell Oil Co.'s No. *3 Elsea; Clark & Carrigan Oil Co.'s No. *1 Taylor; and Crosby Oil Co.'s No. 2 Waggoner.

Daniels Agency's No. 3 Brannon; Duke of Dublin Oil Co.'s No. *3 Vogel; Diamond D Oil Co.'s Nos. *1 and *2 Elsea; Diamond C Oil Co.'s No. 1 Elsea; Double F Oil Co.'s No. *3 Taylor; Dorothy Munn Oil Co.'s No. *2 Elsea; Des Plains Oil Co.'s No. *1 Kierst; Dodson & Taylor Oil Co.'s No. 1 Sanders, fishing, 1515 feet; Delta Oil Co.'s Nos. 1 Taylor, 1, 2, 3 and 5 Morgan.

Eastland Oil & Ref. Co.'s Nos. *2, *3 and *4 Evans; Endwell Oil Co.'s No. *1 Brannon; E. & P. Oil Co.'s No. 2 Waggoner.

Five Oil Co.'s Nos. 4 and 5 Morgan; Fowler (No. 2) Oil Co.'s No. *1 Brannon; Ford-Hollis Oil Co.'s No. 2 Vogel; Fielder et al's No. 1 Mertens, drilling, 1500 feet; Ferris Oil Co.'s No. *1 Elsea; Fisher & Gilliland's No. 1 Evans, shut down, 2035 feet; Fern Oil Co.'s Nos. *1 and *2 Waggoner; Farmer Jones Oil Co.'s No. 1 Taylor; Franklin-Staley Oil Co.'s Nos. *1 and 2 Taylor; Franklin Drilling Co.'s No. *1 Morgan; Fletcher et al's No. *1 Taylor, bailing, 1680 feet; and Falcon Oil Co.'s No. 1 Taylor.

Gulf Prod Co.'s Nos. *1A, *2B, *1, 2 and *3B Elsea, 1 Walling, *2, 3, *4 Taylor, and 5 Mor-

gan; Godley Oil Co.'s Nos. 1 and 5 Waggoner; Gray Gander Oil Co.'s No. *3 Elsea; O. C. Graves Oil Co.'s No. 1 Taylor; Gooch & Davis' No. *3 Evans Goodwin & Chambers' No. *1 Taylor; Green et al's No. *1 Taylor; Golconda Oil Co.'s Nos. *1, 2, 3 and 4 Elsea; Golden Goose Oil Co.'s No. *1 Elsea; Golloway Oil Co.'s Nos. *2, *3 and 4 Taylor; Gladiator Oil Co.'s No. *1 Renner; Graham-Lambert Oil Co.'s No. *1 Elsea; Golden Eagle Oil Co.'s No. 1 Waggoner; Grundy Oil Co.'s No. *1 Taylor; Gold Bell Oil Co.'s No. 1 Vogel; and Great Lakes Oil Co.'s Nos. *1 and *2 Taylor.

Hibernian Oil Co.'s No. 1 Hulsey; Humble Oil & Ref. Co.'s Nos. 3 Waggoner, 1 Evans, 2 Schultz, 1, *2 and 3 Morgan; Howard Weber's Nos. 2 Elsea, *1B, 2B, 3B, 4B, *5B, *7B, *10B, *13B, *11B, 12B, 14B, *15B, *16B, *17B, *1, *2, *3, *4, *5, *6, *7, *8, *11, *14, *13, *16A, 15 and *13 Brannon; Hollis Burk Oil Co.'s No. 1 Smith; Healdton Oil Co.'s Nos. 3 and 4 Evans and 4 Morgan; Harris-Dale Oil Co.'s Nos. *2 and 4 Taylor; Hercules Oil Co.'s No. *1 Brannon; Hartford Oil & Gas Co.'s No. *2 Taylor; Harris & Drew's No. *1 Evans; I. T. Hogan Oil Co.'s No. *1A Morgan; Harris et al's No. 11 Vogel; Hardly Able Oil Co.'s No. *2 Taylor; Henry Ford Oil Co.'s No. 1 Snoddy; Hammond et al's No. 1 Taylor, bailing, 1635 feet; Horn Oil Co.'s No. 1 Elsea; Harvey Oil Co.'s No. 16 Ruyle Farm; R. O. Harvey Oil Co.'s No. *2 Taylor; Heydrick Oil Co.'s No. *1 Taylor; Harrison et al's Nos. 1 and 2 Vogel; and Heard Oil Co.'s No. *1 Taylor.

Imperial Pet. Co.'s Nos. *3 and *4 Evans, 2 and 4 Taylor; Invaders Oil Co.'s No. 1 Brannon; I X L Oil Co.'s No. *1 Morgan; International Tex Oil Co.'s Nos. *3 and 4 Evans, 2 and *3 Morgan; Iowa Burk Syndicate's No. 3 Renner; International Oil Co.'s No. *1 Taylor.

Jackson & Butler's No. 1 Taylor, drilling, 1500 feet.

Kansas City Oil Co.'s Nos. *2 and *3 Elsea; King Eight Oil Co.'s Nos. 2B, 3B, 4B and 5B Waggoner; Knox Oil Co.'s No. *1 Taylor; and Ken Tex Oil Co.'s Nos. *2 and *3 Evans.

Littleton-Weeks Oil Co.'s No. 2 Renner; Lewis et al's No. 1 Taylor; Lewis Oil Corp.'s No. *2 Waggoner; Lula Pearl Oil Co.'s No. *1 Evans; P. J. Lea & Co.'s No. 1 Evans; Lambert & Tolliver's No. 1 Evans; Lesh Drilling Co.'s No. 5 Waggoner; Lucky Two Oil Co.'s No. *1 Waggoner; Liepold Oil Co.'s No. *1 Morgan; Livingston Oil Corp.'s Nos. *2, *3, *4, *5, *6, *7, *9, *10, 11 and *12 Taylor, *2A, *3B, *1B Evans, and 1 Vogel; Lipscomb et al's No. 1 Roberts; and Long et al's No. 2 Vogel, drilling, 1510 feet.

Margay Oil Co.'s Nos. *5, *3, *6, *8, *9, *10, *11 Waggoner 87, 2 and 3 Waggoner 85, 2 Waggoner 86; Magnolia Pet. Co.'s Nos. *9 Mertins, *17, *18, 19 Hardin, *20 Van Cleave, 10 Fowler and 11 Sands; Moody Pet. Co.'s Nos. *1 and *3 Taylor; Marie Elizabeth Oil Co.'s No. *1 Block 88; M. & P. Burk Oil Co.'s No. 4 Evans; M. & P. Burk Extension Oil Co.'s No. 1 Evans; Mississippi Burk Oil Co.'s Nos. 1, *2 and 3 Taylor and 1 Fowler; Marigold Oil Co.'s Nos. *4 Vogel, *1 Schmisseur and 1 Morgan; Minchew-Street's No. *1 Taylor; Majestic Oil Co.'s No. *2 Vogel; Muckle-stone Oil Co.'s No. *1 Elsea; Main Pool Oil Co.'s No. *2 Morgan; Munger Verschoyle Oil Co.'s No. *3 Waggoner; Midco Oil Co.'s No. 1 Schmisseur and No. *1 Waggoner; Missouri & Texas Oil Co.'s No. 1 Simms, drilling, 1700 feet; Mason Big Three Oil Co.'s No. 1 Roberts 44, drilling, 1775 feet; and Jim McMahon's Nos. *1B, 3, 7 and 2 Elsea and 1 Taylor.

Noble & Livingston's Nos. *2, *3, 4, *5, *9, *10, *11 Waggoner Block 86, 3, *10, *11, 12, 13, 14, 15 and 16 Block 85; Northwest Burk Oil Co.'s No. 1 Morgan; Norton Cline Oil Co.'s Nos. 8B and 9B Waggoner; Nacogdoches Oil Co.'s No. 1 Michna.

Olsan Davis Oil Co.'s Nos. 3A, 4A, *1B, *2B, 3B, 4B and *5B Taylor, 2 and 3 Morgan, *2, 3 and 4 Elsea, 2 and 4 Elsea; Osage Oil Co.'s Nos. *1 Renner, *1 Elsea, and *1 and *2 Vogel; Okla. Oil & Ref. Co.'s Nos. *2 Renner and 2 Elsea; Okla. Gas & Pet. Co. has 23 wells below 1500 feet; O'Neil Oil Co.'s Nos. *2, 1 Vogel and 2 Taylor: and Okla. Chief Oil Co.'s No. *1 Taylor, salt water.

P. M. G. Oil Co.'s No. *2 Brannon; Pickens et al's Nos. *2, *3, *4, 5 and 6 Vogel; Panhandle Ref. Co.'s Nos. 13 and 14 Heiserman and 2 Goetze, 5, 4, 6, 7 and *8 Morgan; Producers & Refiners Nos. 2 and *3 Renner; Parker Oil Co.'s No. *1 Elsea; Pennsylvania Oil & Gas Co.'s Nos. *1 and *2 Michna; M. J. Priddy's Nos. 5 and 6 Taylor; Perkins & Harvey's No. 1 Taylor: Penny-Hare Oil Co.'s Nos. 2 and 3 Elsea; Pace Oil Co.'s No. *1 Taylor.

Burkburnett Producers Organize and Agree Not to Sell Under Posted Price

PRODUCERS of crude oil in the Burkburnett fields are not satisfied with the posted price of $2.00, and think that the former price, $2.25, is as little as they should be expected to get for their oil. They base this belief on the prices of other mid-continent crude. As a result of their attitude a meeting was held in Wichita Falls last Monday night at which the Wichita Oil Association was organized, and a number of producers pledged themselves not to sell any of their products for less than the posted price.

The meeting was called by a committee, which had been appointed some days ago to study the situation and suggest some remedy. This committee consisted of J. W. Greenwood, N. H. Martin, G. C. Jensen, E. P. Bass, J. J. Perkins, W. W. Silk, and C. H. Clark. As a result of the deliberations of this committee, an agreement was drawn up and an open meeting called to discuss the matter.

At the meeting Monday night the following agreement was made and signed by producers representing probably 60 per cent of the oil produced in the Burkburnett fields:

The Agreement.

"We the undersigned oil producers and dealers in oil lands of Wichita County, Texas, and other adjacent counties in Texas, hereby bind and pledge ourselves to support the Wichita Oil Association, an organization to be perfected for the primary purpose of protecting and husbanding the oil industry (in so far as it is legal for us to do so as an organization) in the Burkburnett, Northwest Extension, and other oil fields, above named, may be protected, in so far as the laws of our country will permit, and at all times co-operating with the Railroad Commission of Texas and observing their rules and regulations.

"We hereby agree that the executive committee of this organization shall be required to keep themselves posted as to the equitable and reasonable market value of oils of like character as ours, in the Mid-Continent Field, and that the value of such oils, so ascertained by this committee, will be given to the producers of this field from time to time as the market changes may occur.

"This committee will also be required to take notice of developments as they progress in this section and will advise with the producers and owners of oil property to the end that the drilling may be done in the most logical manner so as to protect the field to the best advantage.

"It is the purpose of this Association to devise ways and means for running, transporting and marketing the oil to the best advantage and for the benefit of the producers pledging themselves to support this organization for their own protection.

"The officers of this Association to consist of a president, two vice-presidents, secretary and treasurer, an executive committee of seven, and an advisory committee of twenty-five, and to be governed by such articles of association and by-laws as may be adopted for the accomplishment of the purposes of this Association.

"In order that this Association may work to the benefit of the signers hereto, it is necessary that independent producers representing as much as 85 per cent of the production of this section, become members of this organization, and when such membership has been secured, it then becomes a workable organization in accordance herewith, and notice will then be given by the executive committee, through the public press, that producers representing 85 per cent of the production have become members, and that the Association has been perfected.

"The undersigned members hereby mutually agree and bind themselves not to sell at less than the price posted by the large companies for the Mid-Continent field without giving 30 days' notice to this organization of intention to do so."

Among the first to sign this agreement were R. M. Waggoner, H. C. Elsea, Mrs. Lillis Morgan, R. Brannon, W. W. Silk, J. J. Perkins, C. H. Clark and W. M. Priddy. Among the signers were some of the largest producers in the field.

To Inquire as to Legality.

Whether or not an organization for the purpose of holding the price up by refusing to sell below the posted price is legal was discussed at considerable length. While the general opinion was that the organization planned is legal a committee consisting of W. F. Weeks, H. F. Spencer, A. H. Britain, A. H. Carrigan and Orville Bullington was appointed to look into the matter.

To have charge of the steps necessary for perfecting the organization a committee consisting of J. A. Kemp, Pat Barclay, Will Daniels, J. C. Greenwood, W. M. Priddy, C. H. Clark and E. P. Bass was named.

One of the reasons for the organization is the feeling that prevails that unless something is done to stop the practice of selling oil for less than the posted price there will be another cut in that price. It was said that on good authority it is known that a cut of at least 50 cents a barrel may be made unless some action is taken.

"Bootleggers" Are Blamed.

One feature of the meeting was that there was little criticism of the large companies. "Bootleggers," or those who deal in what are considered unfair practices, were criticised instead, and the big companies praised for helping to keep conditions fair for all concerned.

Only one vote was cast against the adoption of the agreement, and that was based on a belief that it is illegal.

In the course of the discussion a number of instances were mentioned where oil is being sold for as low as $1.00 per barrel. Several companies were named which are said to be buying oil at that figure. Speaking on this phase of the question W. M. Priddy said: "Some of us took the map today and studied it, and we found that the Burkburnett field covers about 3816 acres. It is believed that the production will be about 50,000 barrels per acre. That figures 190,000,000 barrels of oil. Think what it means to cut the price on that. We can't afford to let it be done.

"Your income tax will be less if you let your oil stay in the ground, and spread the production over several years," he said.

Queen Eight Oil Co.'s No. 1 Waggoner.

Roberts & Hill's Nos. *4 Evans, *4 Renner; Ryan Pet. Co.'s Nos. *2, *3, *4, *5, *6, *7, *8, *9, *10, *13, *14, *15, *16 and *17 Waggoner and *2 Morgan; Ranger Burkburnett Oil Co.'s Nos. *1 and 5 Waggoner, *1, *2, *3 and *5 Morgan; Ranger Burk Consolidated Oil Co.'s Nos. *2 and 3 Evans; Ramsey Oil Co.'s No. 1 Evans; Rose 88 Oil Co.'s No. 1 Elsea; Red Burk Oil Co.'s No. *1 Taylor; and Republic Oil Co.'s Nos. 3 and 5 Morgan, 1 and 2 Taylor (Nos. 1 and 2 Taylor have salt water).

Skelly Oil Co.'s Nos. 4B, *6B, *1A, *2A, *4, 5A, *1B, 3B, 9B, 10B, 8, *1A and 4A Waggoner, 1 and 2 Elsea and 9 Ramming; Sioux Oil & Ref. Co.'s Nos. *1 and 2 George; Sky Line Oil Co.'s No. 1 Holtzen, bailing, 1682 feet; Silver Star Oil Co.'s No. 1 Roller; Sanders & Taylor's No. *1 Elsea; Staley, Langford & Chenault's Nos. 4, *5 and 6 Schmisseur, *3 and *5 Morgan, *2 and 3 Waggoner; Silbey Taylor (No. 3) Oil Co.'s Nos. *1 and *2 Michna; Southwestern Pet. Co.'s Nos. *3 and 7 Elsea and 1 Taylor; Southwestern Oil Co.'s No. 1 Vogel; Sammies Oil Co.'s No. *2 Morgan; J. I. Staley's No. 1 A. Morgan; Shelby-Pittsburg Oil Co.'s No. 1 Haney 62; Swastika Oil Co.'s No. 1 Elsea; Seven Oil Co.'s No. 1 Taylor; Sinclair Oil Corp.'s Nos. 1, *2 Brannon and 3 Yarbrough; J. I. Staley's Nos. *1, 1B, *2, 3, 4, 5 and 6 Taylor; Sure Pop Oil Co.'s No. *2 Vogel; Seventy-Two Oil Co.'s No. *3 Waggoner; G. E. Smith Oil Co.'s No. 1 Elsea; Southern Oil Corp.'s Nos. 1 and 2 Evans.

Triangle Oil Co.'s Nos. *1, *3 and 4 Taylor; Texas Big Four Oil Co.'s No. 1 Morgan; Thrift Oil Co.'s Nos. *4, *5, *6, *7, *8, 9, *10, *11 and 12 Brannon and 1 Elsea; Townsend Oil Co.'s Nos. 2 and 3 Renner; Texas Boy Oil Co.'s No. 1 Roberts, shut down, 2015 feet; Texas Consolidated Oil Co.'s No. 2 Elsea; Texas Ranger Oil Co.'s Nos. 6, 3, *7 and *8 Brannon; Tennessee Oil & Gas Co.'s Nos. 2 and 3 Evans; Touman Oil Co.'s No. 1 Waggoner; Travelers Oil Co.'s No. 1 George; Texas Crude Oil Co.'s No. 1 Vogel, drilling, 1770 feet; Tarver Drilling Co.'s No. *2 Evans; Tex. Queen Oil Co.'s No. *1 Taylor; Texas Chief Oil Co.'s Nos. 2, *4, *5 and *7 Taylor; Tomanian Oil Co.'s Nos. 3 and 5 Taylor; Texhoma Oil & Ref. Co.'s Nos. *1B and 2B Evans; Tomax Oil Co.'s Nos. 1 and 2 Taylor; Texas Blue Bonnet Oil Co.'s No. *1 Elsea; Texas Prod. & Ref. Co.'s Nos. *2 and *4 Renner; Tollinder & Goodwin's No. 1 Vogel, casing leaking; Two Ways Oil Co.'s No. 1 Taylor; Texas Star Oil Co.'s No. *1 Elsea; Texas Company's Nos. *5, *3, 13, 11, *14, *16, *1, *18 and 19 Fowler, 4, 6, 12, 13, 14, 16 *17, 18, 20, 21, 22 and 23 Morgan and 12A Hardin; Texas Seven Oil Co.'s Nos. *1 and 2 Brannon; Texas Penn Oil Co.'s No. 1 Brannon; and Tennessee Chief Oil Co.'s No. 1 Taylor.

United Producers Oil Co.'s Nos. *5, *6, *7, *8, *9 and *10 Waggoner; Uncle Joe Oil Co.'s No. 1 Evans.

Virginia Oil Co.'s No. 1 J. E. Waggoner.

West Virginia Oil Co.'s No. 1 Evans, casing trouble, 1612 feet; Willis Rammin's No. *2 Renner; Western Star Oil Co.'s No. *1 Harmon; Western Oil Corp.'s Nos. 1 Waggoner, 1, 1A, 2A, 3A, *4A, *1B, *2B, *3B Taylor, and 2 Elsea; Waureka No. 2 Oil Co.'s Nos. 1 Taylor, 2 and 3 Elsea; Wimpie Oil Co.'s No. 1 Brannon; Weimer Oil Co.'s No. 2 Renner; West Tennessee Oil Co.'s No. *1 Elsea; Bob Woods Oil Co.'s No. 1 Morgan; Webber-Tucker's Nos. *1, *2, 3, 1A, 2A, *3A, 4A and 5A Elsea; Wichita American Oil Co.'s No. 1 Morgan; G. C. Woods Oil Co.'s Nos. 3, 4, 5 and 7 Morgan and 1 Evans; Warrior Oil Co.'s Nos. 2, 3, 4 Taylor; W. & F. Oil Co.'s No. 1 Wolf; Western Globe Oil Co.'s Nos. 1 and 2 Vogel; C. W. Wallace Oil Co.'s No. 1 Schmisseur; West Burk Oil Co.'s No. 1 Taylor; Woodburn Oil Corp.'s No. 7 Morgan, drilling 1540 feet.

Young Bros. & Kennedy's No. 4 Brannon.

Spark From Boiler Starts Fourth Fire at Burkburnett; Loss Will Total $100,000

THE fourth great fire within a few weeks broke out in the Burk-Waggoner Field October 11, when a flow tank in the heart of Block 88 became ignited from a spark from a boiler. The flames spread rapidly, and before the fire was controlled it destroyed a number of tanks and probably 20 rigs and derricks. The damage is estimated at close to $100,000.

Block 88 is the scene of the greatest activity in the field. Tanks and derricks are close together and once a fire starts it is very difficult to stop it. Among the companies which lost as a result of the fire are the following: International Petroleum Company, Burk 56 Oil Company, Sure Shot Oil Company, Southern Oil Corporation, Brooks Oil Company, Texas Consolidated Oil Company, International Texas Oil Company and others. Because of recent rains communication with the fields is very difficult and the exact damage done could not be learned.

The fire started about 6 o'clock and was not fully controlled until Sunday, when it had burned itself out. It was feared for a while that it might spread over a wide area.

May Organize Against Fire.

As a result of the many disastrous fires recently some organization will probably be formed by oil men for their protection. One plan is to organize a volunteer fire department, which will respond to fires in all parts of the field. Because the rigs and tanks throughout the field are so close together the fear is often expressed that a fire may, under favorable circumstances, wipe out a great part of it. With proper precautions, however, it is likely that any fire which starts can be confined to a small area.

One source of spreading the flames lies in wooden storage tanks. When one of these catches fire it burns in a flash, and scatters fire in every direction. A steel tank, on the other hand, helps to confine the flames. In the recent fires wooden tanks have played a part.

One of these tanks, in junction with a pool of water standing after the recent rains in Waggoner City, was responsible some time ago for much of the damage done in the Waggoner City fire. When the tank burst the burning oil scattered over the pool and the flames crossed the water, where they found fresh fuel.

OTHER WELLS AT BURK-BURNETT

The following wells at Burkburnett are drilling at the depths mentioned unless otherwise stated:

Arlington Oil Co.'s No. 1 Willis, shut down 1295 feet; American Prod. Co.'s No. 1 Schmisseur, drilling 1280 feet; Austin Oil Co.'s No. 2 Taylor, 1310 feet; Ajax Oil Co.'s No. 1 Brannon, skidding rig; and Jack Abernathy's No. 1 Vogel, 1305 feet.

Bennett et al's Nos. 2 and 3 Taylor, 840-990 feet; Bowers Oil Co.'s No. 1 Foster, shut down 925 feet; Bradley Bros.' No. 6 Vogel, shut down 215 feet; Bashara Oil Co.'s No. 2 Taylor, shut down 435 feet; Burk Dreamer Oil Co.'s No. 2 Taylor, 1160 feet; K. B. Berkland Oil Co.'s No. 2 Morgan, 1210 feet; Burk Wonder Oil Co.'s No. 2 Vogel, 1070 feet; Burk Belt Oil Co.'s No. 1 Brannon, 875 feet; Burk "B" Oil Co.'s No. 1 Brannon, 770 feet; Burk Key Oil Co.'s No. 1 Meyers, shut down 955 feet; Big Chief Oil Co.'s No. 1 Hamilton; Burk Waggoner Oil Co.'s Nos. 2, 3 and 4 Taylor, drilling; Brigham Oil Co.'s No. 1 Taylor, 1440 feet.

W. E. Conner Oil Co.'s No. 1 Beach, 1210 feet; Cary Bros.' No. 3 Elsea, 1340 feet; Chapell Oil Co.'s No. 4 Elsea, 1105 feet; Cotton States Oil Co.'s No. 1 Sparks, fishing 1015 feet; and Cannon & Hobbs' No. 1 Schmisseur, 1350 feet.

Dell Oil Co.'s No. 1 Elsea, 760 feet.

Gulf Prod Co.'s Nos. 3 Schmisseur and 4 Elsea, 1090-1410 feet; Golconda Oil Co.'s No. 5 Elsea, 1360 feet; Green et al's No. 2 Taylor, 1460 feet; Great Lakes Oil Co.'s Nos. 3 and 4 Taylor, 1430-1100 feet; Gilbert True Oil Co.'s No. 1 Brannon, 1385 feet; and Gooch & Davis' Oil Co.'s No. 4 Evans, 1350 feet.

Heard Oil Co.'s No. 2 Taylor, 960 feet; Howard Webber's Nos. 10 and 12A Brannon, shut down 245 feet and drilling 995 feet; Humble Oil & Ref. Co.'s Nos. 4 Waggoner 1375 feet, and 3 Morgan shut down 415 feet; Hartford Oil & Gas Co.'s No. 3 Taylor, 900 feet; Healdton Oil & Gas Co.'s No. 6 Evans, 1095 feet; and Heydrick Oil Co.'s No. 2 Taylor, 860 feet.

Iowa Burk Oil Co.'s No. 4 Renner, 1070 feet.

Jewell V. Oil Co.'s No. 2 Taylor, 850 feet; Jackson & Wise Oil Co.'s No. 3 Morgan, 1470 feet.

King Eight Oil Co.'s Nos. 1B, 2A, 3A Waggoner and 2 Taylor, drilling; Kenoka Oil Co.'s No. 1 Brannon, 795 feet; Kline & Clark Oil Co.'s No. 5 Taylor, 1390 feet; and Kedane Oil Co.'s No. 1 Elsea, 1075 feet.

Livingston Oil Corp.'s No. 3A Evans, 1459 feet; Lewis et al's No. 2 Taylor, 400 feet; and P. J. Lea's No. 2 Evans, 600 feet.

Magnolia Pet. Co.'s Nos. 6 Meyers and 21, 22 and 25 Van Cleave, drilling above 1500 feet; Moody Pet. Co.'s No. 2 Taylor, 850 feet; Margay Oil Co.'s No. 4 Waggoner, 1250 feet; McNally Oil Co.'s No. 1 Roller, shut down 855 feet; Middle States Oil Co.'s No. 1B Taylor, 300 feet; McMahon Oil Co.'s No. 2 Elsea, shut down 445 feet; Midco Oil Co.'s No. 2 Schmisseur, 990 feet; Mississippi Burk Oil Co.'s No. 4 Taylor, 1075 feet; Marigold Oil Co.'s No. 3 Vogel, 1170 feet; and Mobile Oil Co.'s No. 1 Elsea, 1450 feet.

Charles F. Noble Oil Co.'s No. 1 Brannon, 1075 feet; Northwestern Pet. Co.'s Nos. 2, 3 and 4 Elsea, drilling; Noble & Livingston's No. 21 Waggoner 85, 370 feet.

Okla. Pet. & Gas Co.'s No. 3 Taylor 96, 1200 feet; Olsan & Davis' No. 4 Morgan, 1060 feet; O. S. Drilling Co.'s No. 1 Daniels, oil sand, 1271 feet; Okla. Oil & Ref. Co.'s No. 2B Elsea, 1100 feet; John O'Neill's No. 1 Brannon, 1270 feet; Oaks Oil Co.'s No. 1 Taylor, 1300 feet; and Osage Oil Co.'s No. 2 Taylor 97, 675 feet.

Prescott-Phoenix Oil Co.'s No. 1B Taylor, 1450 feet.

Ranger Burkburnett Oil Co.'s No. 6 Wag-

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Buy a Bessemer Gas Engine for your next installation.

Install it at our risk, if you will, but try a Bessemer. It will make good, it will more than fulfill our claims. Bessemer Engines have been doing this for practically twenty years.

That is the reason that Bessemers are being adopted exclusively by many of the more successful companies and producers, many of whom formerly used other types.

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60 York St., Grove City, Pa.

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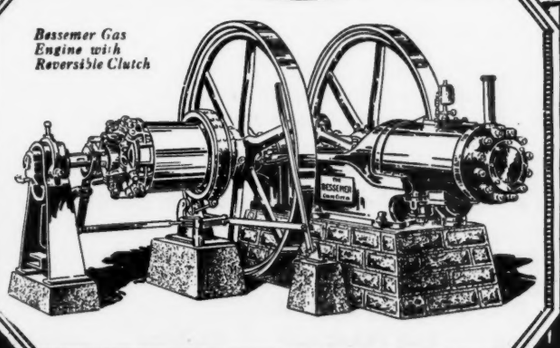
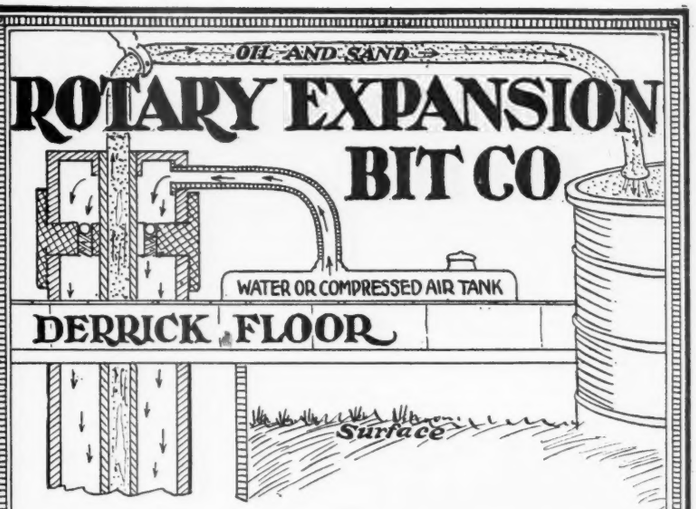
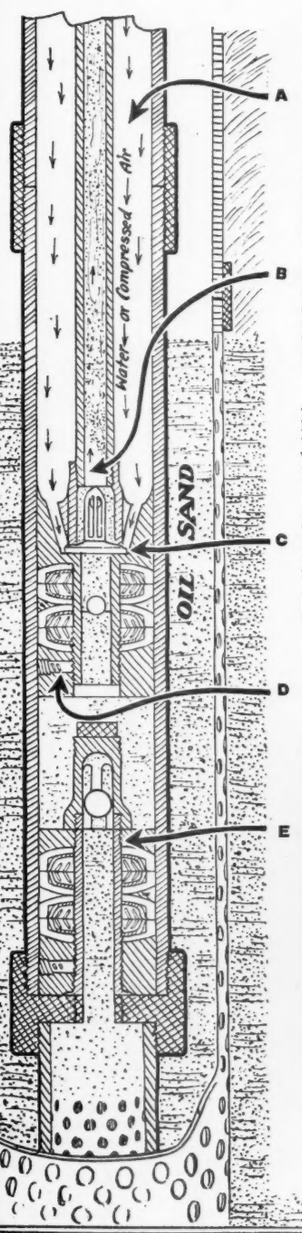


Bessemer Gas Engine with Reversible Clutch

ROTARY EXPANSION BIT CO





HUMASON Sand Pump

Arrow at A represents water or compressed air, forced by upward stroke of piston through passages C, to assist in raising oil sand, etc., upward through sucker rod B to the surface.

D represents lower nut on piston, said nut having ratchet allowing tightening movement only of nut, thus compressing discs of plunger, when desired, to maintain suction. Piston is tightened by lowering nut D against foot valve E and turning.

This pump combines the advantages of a reciprocating and an air lift pump, and has the further advantage of a piston with cups which may be expanded without removal from the well.

These pumps are now ready for market, and will work in wells with or without a screen, being adapted to handle large quantities of sand, B. S. or other foreign matter.

Rotary Expansion Bit Co.
G. A. HUMASON
Houston, Texas
Office 626 Binz Building
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G. A. Humason, inventor of Humason Cross Roller Bit, now made and sold by Reed Roller Bit Co.

goner, 1135 feet; Republic Oil Co.'s Nos. 4 and 6 Morgan, 615-1260 feet; Ryan Pet. Co.'s No. 3 Morgan, 1360 feet; and Ranger Burk Con. Oil Co.'s No. 4 Evans, 300 feet.

W. J. Shelton Oil Co.'s No. 1 Taylor, 800 feet; Skelly Oil Co.'s Nos. 6A, 5B and 11 Waggoner, drilling; Staley, Langford & Chenault's Nos. 10 Pratt, 2A, 3A, 4A, 5A and 1B Brannon, drilling above 1500 feet; St. Louis & Okla Oil Co.'s No. 1 Taylor, 600 feet; and J. I. Staley's No. 2 Taylor 550 feet and No. 2 Morgan 625 feet.

Tar Baby Oil Co.'s No. 1 Elsea, 1210 feet; Triangle Oil Co.'s No. 2 Taylor, 1275 feet; Tex Crude Oil Co.'s No. 2 Vogel, 1450 feet; Tomanian Oil Co.'s No. 7 Taylor, 1295 feet; Thrift Oil Co.'s No. 2 Elsea; 700 feet; Tex Penn Oil Co.'s No. 2 Brannon, 600 feet; Texhoma Oil & Ref. Co.'s Nos. 1 Daniels and 2 and 3 Cropper, all on oil sand above 1300 feet; Texas Chief Oil Co.'s Nos. 8 Taylor 350 feet, 9 Taylor 625 feet and 10 Taylor 525 feet; Tennessee Chief Oil Co.'s No. 2 Taylor, 1290 feet; Texas Company's Nos. 7 Friedline, 20 and 21 Fowler, 29 Morgan, all above 1500 feet.

Whole Field Oil Co.'s No. 1 Martin, shut down 360 feet; G. C. Woods' No. 6 Evans, fishing 970 feet; White Star Oil Co.'s No. 1 Harmon, 1450 feet; West Tennessee Oil Co.'s No. 2 Elsea, 870 feet; Woodburn Oil Corp.'s No. 3 Evans, 1000 feet; and Wichita American Oil Co.'s Nos. 3 and 6 Vogel, 525-325 feet.

A NEW BOTTOM HOLE PLUG

Bottom hole plugs are taken most seriously by the practical oil men and they want to know what they are doing when the time comes to make use of a plug at the bottom of the hole. The Guiberson Oil Well Specialties Corporation, 418 South Boston St., Tulsa, Okla., have a plug which they claim much for.

It is a mechanical device, not merely a piece of dead material. It has a mechanical energy potentially embodied in its makeup, and when positioned in the well and made operative, it exerts a much greater energy in performing its function than the energy expended in making it operative. It has a disposition to accomplish its purpose.

When the plug is properly positioned in the well and made operative, the sealing medium is forced to make a seal between the plug and the wall of the well. The spirals are reinforcements for the sealing medium, serving as guides; directing the force outward and forcing the sealing medium into the finest variations in the wall of the well, under a heavy lateral pressure.

The sealing medium is a hemp fibre, or common OAKUM, commonly used to calk wooden tanks, and known as tank-builders oakum, saturated thoroughly in a cement mixture. This sealing or packing material is merely a sealing medium between the plug and the wall of the well, and the stability of the sealing medium is wholely dependent on the mechanical energy of the plug.

The spiral blades of the plug, when positioned and made operative, have two movements:

(1) A come-together movement, compressing the sealing medium.

(2) A latteral (radial) expansion, permiting it to engage with the wall of the well.

REPAIR LINE

The four sea loading lines of the Cortez Company, which were damaged by the recent Gulf hurricane, have been repaired, and loading of tankers is going on regularly.

The Humble Oil & Refining Company has awarded a contract to the Foamite Firefoam Company for a Foamite system at the company's tank farm at Texas City.

Oil Operator, Former Minister, Gives $80,000 to Church Fund

A. C. PARKER, oil operator at Wichita Falls, was a minister of the Christian church at Dallas before going into the oil business. Apparently he has not forgotten this fact, for it was announced last week that he and Mrs. Parker had made a donation of $80,000 to be used in building a church for the use of the students of the Texas Christian University at Fort Worth.

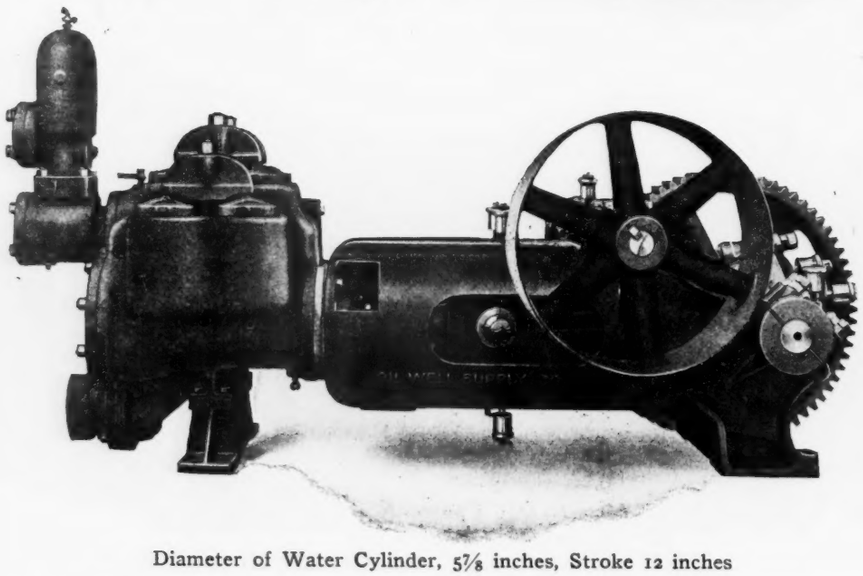
The gift was made a part of the fund of $350,000 which is being raised by the Christian church in Texas for use in educational, mistate. Of the total amount an additional sum of $190,000 is to go to the university. Mr. Parker is a member of the board of trustees of the university, and was one of the founders of Midland College. Since entering the oil industry a year ago he has been associated with G. Clint Wood and others.

Regardless of the strike at the steel mills, steel is still arriving for the carbon plant being erected at Monroe, La., for the United Oil & Natural Gas Products Corporation. Several buildings have already been erected. Around 845 tons of steel has either arrived or is in transit.

F. W. Hoover, vice president of the Lucey Manufacturing Company of New York, is in Houston this week.

Power Driven "Mud Hog" Pump

"OILWELL" ESTD. 1862 TRADE MARK REGISTERED



Diameter of Water Cylinder, 5⅞ inches, Stroke 12 inches

Designed for use where steam is either unavailable or undesirable. Can be furnished for belt drive or gear drive, and can be driven by any motive power.

Built to work against high pressures and to handle thick fluids. Suitable for pumping oil through pipe lines where large capacity as well as high pressure is required.

Will work against 500 pounds pressure.

Send for Bulletin No. 19 which describes this pump in detail. Also Bulletin No. 14 which describes our steam driven "Mud Hog" and "Giant Mud Hog" pumps, or inquire at any of our 75 Branch Stores.

"Oilwell" products world renowned---Both above and under ground

OIL WELL SUPPLY CO.

PITTSBURGH, U. S. A.

NEW YORK LOS ANGELES SAN FRANCISCO TAMPICO LONDON

Everything for Oil Wells Branch Stores in All Oil Fields

What our monthly stock list means to you!

THE first of each month our Stock List is mailed to not only our customers but any one interested in steel items who has asked to be on our mailing list. This Stock List itemizes our supply of steel items according to size, weight and length. Our large stock, the largest in the United States west of the Mississippi River, enables our customers to concentrate their buying next door to the scene of oil operations, thereby taking full advantage of our ability to make prompt and complete deliveries on all orders.

Take advantage of the Stock List! Write immediately to be put upon our mailing list for this valuable service!

STRUCTURAL STEEL FOR

Refinery Buildings	Agitators
Oil Tanks	Stills

Tank Cars

COMPLETE WAREHOUSE STOCKS

Beams	Bars
Channels	Plates
Reinforcing Bars	Sheets
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The Hughes Reaming Cross Roller Bit

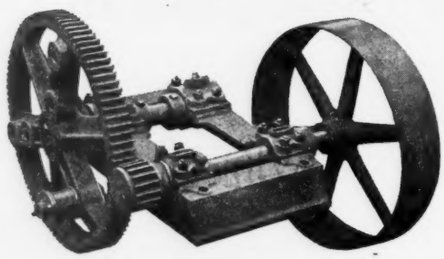
To those who want a CROSS ROLLER Bit we now offer the best of its kind for

$250.00 for 9 7/8" Size

OTHER SIZES IN PROPORTION

The Hughes Tool Company
HOUSTON, TEXAS

Marion Keystone Pumping Jack



A handy pumper, and built for continuous service; can be used with either walking beam or jack arrangement and operated with a small engine. Marion Pumping Powers are built in different styles to meet the demands of the individual lease.

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New 72"x18' Tubular Boilers, 125 lb. Pressure
Used Tubular Boilers, 60 to 150 H. P.
Used Pipe, 2 to 8-inch
Oil Stills Made of Tubular Boilers
Pumps, Heaters, Valves, Fittings, Etc.

ASK FOR USED MACHINERY STOCK SHEET

Large Stock for Immediate Shipment at RIGHT PRICES

Landreth Machinery Co.
JOPLIN, MO.

Another Big Gusher is Credited to the Clairborne Field in Louisiana

ANOTHER 20,000 barrel gusher was reported from the Claiborne field during the past week, the Standard Oil Co.'s No. 1 Oakes in section 29-21-7, coming in at 2096 feet. The Louisiana Oil Refining Corporation completed its second well on the Jackson lease in section 24-21-8, with an initial production of 5,000 barrels, from the shallow sand at 1220 feet. With a settled production conservatively estimated at 50,000 barrels a day, an average of less than 10,000 barrels a day has been run from the Claiborne field owing to lack of pipe line facilities. This was increased during the past week to 10,285 barrels a day, which was shipped in tank cars from Homer.

The completion of another 20,000,000-foot gas well on the Taylor-Trosper lease in the Bethany district, by the Gulf Refining Co., has attracted the serious attention of gas producers to this territory and it is reported that the Dawes interests are contemplating the construction of a pipe line to market the gas from the new field. Previous completions made in this territory were the Gulf Production Co.'s No. 1 W. C. Agurs in Panola county, making 17,000,000 cubic feet of gas in the shallow sand at 1080 feet, and its No. 2 W. C. Agurs which made 20,000,000 cubic feet at 2926 feet.

The Standard Oil Co. has completed twelve miles of 8-inch line from the Claiborne oil field, and has also started a crew working from the middle of the line toward its main trunk line at Moore Station. A tank farm has been established three miles west of the production, where a pumping station is being built and grading has been completed for eight 55,000 barrel tanks. The Standard Oil Co. is also constructing a loading rack on the Louisiana & Arkansas railway, where their pipe line crosses the railroad seven miles north of Minden, and expects to be loading 10,000 barrels of oil a day from the Claiborne field within a week.

NORTH LOUISIANA PRODUCTION

Production in the North Louisiana field during the past week averaged 57,775 barrels a day, distributed as follows:

	Barrels.
De Soto and Red River	22,935
Caddo light	9,460
Caddo heavy	15,095
Claiborne	10,285
Total	57,775
Last week	48,575
Increase	9,200

CLAIBORNE COMPLETIONS

Arkansas Natural Gas Co.'s Langston 90, section 19-21-7, flowing 1000 barrels at 1160 feet, and Langston 95, section 19-21-7, flowing 600 barrels at 1060 feet.

BULL BAYOU COMPLETIONS

Caddo Central Oil & Refining Co.'s Pugh 1, section 13-12-11, flowing 1500 barrels at 2650 feet.

Depositors Oil & Gas Co.'s Polley 5, section 7-12-10, flowing 60 barrels at 2750 feet.

Continental Asphalt & Petroleum Co.'s No. 1 Polley, section 7-12-10, flowing 5000 barrels at 2725 feet.

Morefield et al.'s Nelson 1, section 6-12-10, flowing 500 barrels at 2780 feet.

Sinclair Oil Co.'s Clarkson A-1, section 17-12-10, flowing 35 barrels at 2725 feet, and Nelson A-1, section 8-12-10, flowing 200 barrels at 2725 feet.

Wrightsman et al.'s Polley 4, section 7-12-10, flowing 120 barrels at 2735 feet, and No. 10 Polley in the same section making 15,000,000 cubic feet of gas at 2680 feet.

CADDO COMPLETIONS

Allied Oil Co.'s John R. Land 2, section 4-20-15, pumping 125 barrels at 2180 feet.

Dixie Oil Co.'s Robertshaw 19, section 14-21-15, pumping 150 barrels at 2350 feet, and Christian 6, section 27-21-15, pumping 50 barrels at 2275 feet.

Higgins Oil & Fuel Co.'s J. B. H. & F. C. 14, section 20-20-15, pumping 6 barrels at 2300 feet.

La-Ark Oil & Ref. Co.'s Marshall 1, section 10-20-16, pumping 20 barrels at 2300 feet.

Lake Oil Co.'s Wells 2, section 10-21-15, pumping 25 barrels at 2450 feet.

Louisiana Consolidated Oil & Refining Corporation's Peak 10, section 23-22-15, pumping 50 barrels at 1050 feet.

Old Settlers Oil Co.'s Lynn 19, section 12-21-15, pumping 150 barrels at 2300 feet.

Richardson Oil Co.'s Johnson 5' section 25-21-15, pumping 75 barrels at 2300 feet.

Texas Co.'s A. Herndon 5, section 14-21-15, pumping 30 barrels at 2320 feet.

United States Petroleum Co.'s Ellerbe 3, section 27-20-15, pumping 15 barrels at 2350 feet.

CLAIBORNE DRILLING REPORT

Atlas Oil Co., Atkins 1, section 20-19-6, will abandon at 2190 feet.

Ben Anguish Oil & Mineral Co., Fincher 1, section 5-20-7, drilling at 1150 feet.

Baird & Flynn, Burnett 1, section 36-22-8, setting 4½ inch casing at 2007 feet.

Belchic & Laskey, White 1, section 26-21-8, tested dry, drilling deeper.

Denman et al., Harmon 1, section 17-21-8, drilling 750 feet.

Eastman & Barnes, Shaw 4, section 30-21-7, set 6 inch casing at 2026 feet.

Eastman & Barnes, Shaw 5, section 30-21-7, rigging up to drill.

Frost Oil Co., Chatman 5, section 31-21-7, set 10 inch casing at 150 feet.

Gryder Oil Co., Gryder 1, section 23-21-8, location.

Mills Bennett, McClung 1, section 29-21-7, drilling 150 feet.

Keen & Woolf, Herold 1, section 19-21-7, rigging up to drill.

H. & P. Palmer, Kirkpatrick 1, section 34-21-7, set 8 inch at 1200 feet.

H. & P. Palmer, Langston 3, section 19-21-7, set 10 inch casing at 150 feet.

Roxana Pet. Co., Taylor 1, section 14-23-8, set 10 inch casing at 325 feet.

Section 30 Oil Co., Pressley 1, section 11-21-8, location.

Producing & Refining Co., Burnett 1, section 4-20-7, derrick.

Sims Oil Co., Japhet 1, section 31-21-7, derrick.

Sinclair Oil Co., Langston 1, section 18-21-7, drilling 500 feet.

Sinclair Oil Co., Oakes 1, section 31-21-7, drilling 775 feet.

White Bros., Oakes 2, section 30-21-7, set 6 inch casing at 2025 feet.

CADDO DRILLING OPERATIONS

Allied Oil Co., John R. Land 3, section 4-20-15, drilling 1650 feet.

Burford & Brimm O. & G. Co., Watkins 1, section 2-20-16, drilling out cement plug.

Dixie Oil Co., Robertshaw 21, section 14-21-15, set 6 inch casing.

Dixie Oil Co., Robertshaw 21, section 13-21-15, drilling 1450 feet.

Dixie Oil Co., Slattery 8, section 27-21-15, drilling 1200 feet.

Sun Company, Bradford 130, section 35-21-15, drilling 800 feet.

Texas Co., Mabry 7, section 15-21-15, drilling 2200 feet.

Texas Co., D. H. Raines 16, section 15-21-15, drilling 1900 feet.

Texas Co., W. E. Noel B-6, section 14-21-15, bailing 2375 feet.

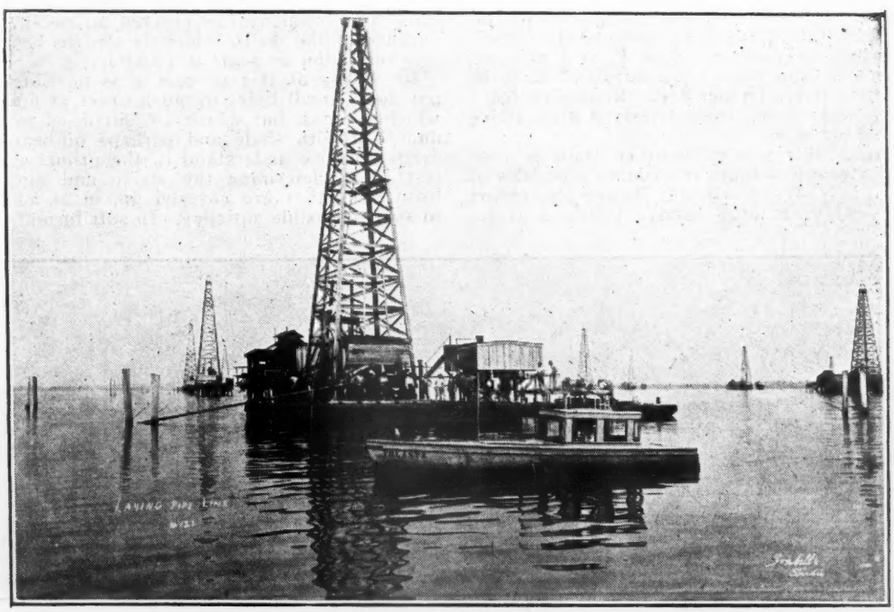
Texas Co., Lynn 3, section 20-21-15, drilling 2275 feet.

DE SOTO DRILLING WELLS

Boone Oil Co., Giauque 1, drilling 2175 feet.

De Soto Oil & Ref. Co., Terrill 1, fishing 1925 feet.

Dev. Oil & Ref. Co., Safford 2, section 2-11-11, setting packer 2750 feet.



LAYING A LINE IN CADDO LAKE IN LOUISIANA

W. G. Strange Oil & Ref. Co., Williams 1, section 6-10-12, set 10 inch casing.

Texas Co., Wemple B-19, section 23-12-11, drilling 1775 feet.

Texas Co., Giauque 1, section 36-12-12, rigging up to drill.

Texas Co., Albritton A-5, section 24-15-12, location.

RED RIVER REPORT

Bayou Pierre Oil & Pet. Co., State 1, section 23-12-11, building derrick.

Bull Bayou Oil Co., Armistead 11, section 24-12-11, set 6 inch casing.

Caddo Central Oil & Ref. Co., Nelson 1, section 6-12-10, drilling 1850 feet.

Cont. Asphalt & Pet. Co., Robinson 1, section 32-13-10, drilling 1050 feet.

Clark & Greer, Pugh 2, section 13-12-11, bailing 6 inch casing.

Clark & Greer, Pugh 3, section 13-12-11, drilling 50 feet.

Coushatta Bayou Oil Co., Globe Lumber Co. 1, section 25-13-10, location.

Doan Oil Co., Pugh 4, section 12-12-11, drilling 1850 feet.

Emerson & Noble, Hollingsworth 1, section 8-12-10, location.

Doan et al., Nelson 1, section 6-12-10, drilling 175 feet.

Foursome Oil Co., Polley 5, section 7-12-10, drilling 250 feet.

Gilliland & Foster, Hollingsworth 1, section 18-12-10, drilling 275 feet.

Paggi et al, Nelson 1, section 8-12-10, drilling 1800 feet.

Prichard et al., Ardis 1, section 1-12-11, set 10 inch at 300 feet.

Paggi et al., Nelson 2, section 8-12-10, rigging up to drill.

W. F. Reynolds, Chaffraix 2, section 30-12-10, drilling 1700 feet.

J. & D. Schaffer, Robinson 5, section 8-12-10, rigging up to drill.

Sinclair Oil Co., Nelson A-3, section 8-12-10, drilling 50 feet.

Sun Company, Nelson 1, section 6-12-10, drilling 1475 feet.

Tex-Penn Oil Co., Clarkson 1, section 17-12-10, drilling 2000 feet.

Woodley et al., Armistead 1, section 29-13-10, setting liner at 2900 feet.

SPECIAL TRAIN FROM SHREVEPORT

A solution of the problem of the oil men who wish to travel between Homer and Shreveport, on account of the prominence of the Claiborne oil field, has been partially solved through the announcement that a special train will be run each day between Shreveport and Homer. Equipment will be carried to handle express matter. The following schedule has been announced:

Leave Shreveport V., S. & P. at 5:30 a. m., arrive Gibsland 6:55; leave Gibsland L. & N. W., 7:15; arrive Homer 8:35. Returning, leave Homer 2:30 p. m., leave Gibsland 8:18, arrive Shreveport p. m.

Besides this service another train is provided through changes in existing schedules of the L. & N. W. as follows: Leave Shreveport 10 a. m., V. S. & P., arrive Gibsland 11:42; leave Gibsland L. & N. W. 12:25, arrive Homer 2:10. Returning, leave Homer at 4 p. m., arrive Gibsland 5:45, arrive Shreveport 11:45 p. m.

Strange Interests Sell Portion of Louisiana Holdings for $3,000,000

ONE of the most important transactions in oil field properties recently consummated was that of the W. G. Strange Oil & Refining Co., which sold a portion of its holdings to a syndicate of brokers and oil operators last week, the sale involving a consideration of $3,000,000.

Among the properties included in the transaction was a lease of 1120 acres in the heart of the Bull Bayou district, 160 acres of which was sold outright, including a daily production from four producing wells of 10,500 barrels a day of high grade oil. A half interest in the remaining 960 acres was retained by the Strange interests.

The holdings also included leases on 16,000 acres of undeveloped acreage in Claiborne and Union Parishes, and 940 acres in Caddo.

W. G. Strange, president of the W. G. Strange Oil & Ref. Co., was associated with some of the earliest development in the North Louisiana field and has been markedly successful in every enterprise with which he has been connected. His earliest operations were in the east end of the Mooringsport district where he successfully developed the holdings of the Peerless and Mohawk Oil Companies, both of which were sold to other corporations.

F. L. Dyer, vice president of the W. G. Strange Oil & Refining Company, had charge of the Elton Oil & Gas Co. when it completed the first producer on the Hobbs lease, the discovery well of the Pine Island district. Eight months ago the W. G. Strange Oil & Refining Company was organized with W. G. Strange president, F. L. Dyer, vice president, and R. R. Sutherland, secretary-treasurer, with J. G. Palmer and W. H. Morefield completing the stockholders in the company.

Included in the syndicate which has acquired the Strange properties are John O. Mitchell, president of the Tex-La-Homa Oil Co.; M. E. Singleton, president of the Missouri State Life Ins. Co., of St. Louis, Mo.; Nelson L. Barnes, of New York, president of the Globe Oil Co.; Bert R. Farmer, vice president of the Duncan National Bank, of Duncan, Okla., and G. G. Gillette, of Tulsa, Okla.

It is understood that the syndicate will turn the property over to a big eastern corporation which has recently bought up a large proportion of the producing properties in the Pine Island district.

The W. G. Strange Oil & Refining Co. still owns thousands of acres of leases in the North Louisiana field and has started drilling operations on a big block in the old Pelican field, in the south end of De Soto Parish.

PROSPECTING BY NEW METHOD

There has been much talk in recent years of the possibilities of core drilling to determine the character of formations where no outcrops are apparent, but there has been no serious attempt to prospect for oil in this manner until recently. It has remained for the Shell Company of California to start prospecting in the new way. The company ordered a portable combination rotary and core drill which it has put into operation in the Southern California fields in an effort to determine formations in flat country where outcrops cannot be located to show the character of the structure. Seemingly the result of this experimental work has been satisfactory, because the company has entered an order for another of the drills, which is also to be put into operation as soon as possible.

By means of this process it is possible to put down small holes in quick order at points which are flat, but which are supposed to be underlain with shale and perhaps oil-bearing sands. As we understand it, the primary object is to determine the strike and dip of formations that are covered up, in an effort to spot a possible anticline. In soft formation, a small fish tail bit is used, but in the case of conglomerate and other hard material, it is expected that the core drill will be put into use so as to bring to the surface exact sections of the rock passed through. These sections being held intact, it is possible to determine the degree of dip and perhaps by minute observation the direction of dip also.

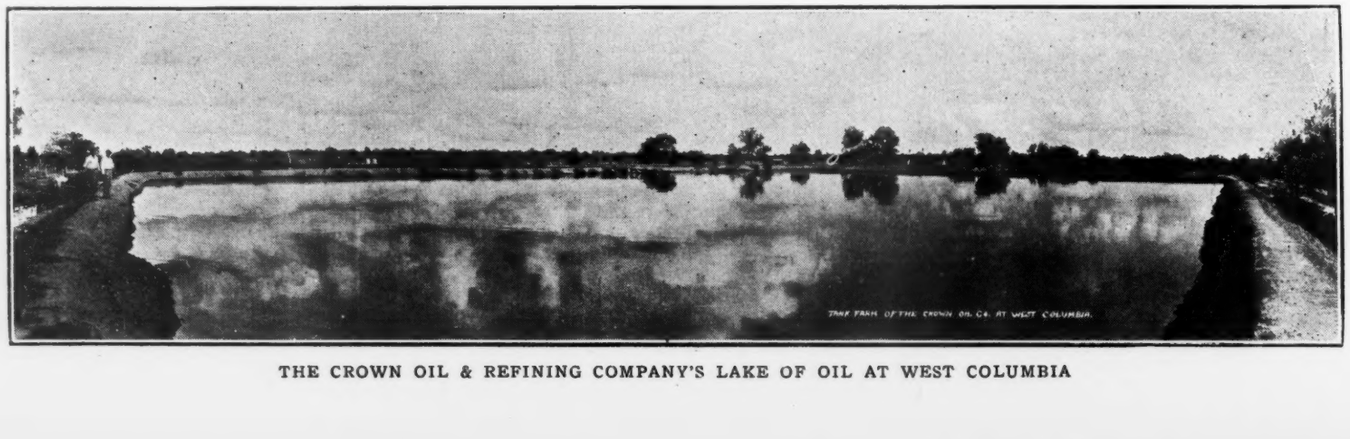
In the event that this form of prospecting work results satisfactorily, there is a probability that the method will come into general use in the future, particularly as shallow holes can be sunk for prospecting purposes at comparatively small cost.—Oil Age.

RAIN INTERFERES

Drilling operations in the Coastal section during the past week were considerably delayed by the high water due to the heavy rains. Wildcat territory, however, was the worst off because of the almost impassible condition of the roads.

High water was reported at Hull, where several wells were forced to close down, in the Blue Ridge field the water was four and five feet deep in some places, and Stratton Ridge in Brazoria county came in for its usual supply of lakes.

At Markham last Saturday a rainfall of five and a half inches was recorded within a period of three hours.



THE CROWN OIL & REFINING COMPANY'S LAKE OF OIL AT WEST COLUMBIA

Motor Truck Cost Estimated

Figures Are Given and Explained by F. A. Snyder.

By F. A. SNYDER,
Ship-by-Truck Bureau

NOTWITHSTANDING the great amount of traffic carried by motor trucks in the oil fields during the past three years, there is surprisingly little complete and accurate information available as to the ton-mile cost of freight haulage by motor truck. One reason for this is that very few motor truck users have kept complete and accurate records of their costs. Emphasis may well be laid on the word "complete." There are many partial cost records available. Of this class are most of those sent out by motor truck manufacturers. When it comes to the items of depreciation and overhead charges, the motor truck operator often deceives himself as to the cost of carrying on his business.

The most detailed figures thus far published are those compiled by the Motor Truck Association of America. They appeared in Engineering News-Record of February 27, 1919, page 438, and are printed with the accompanying explanation as follows:

Five Ton Gasoline Truck

The cost of operating a five ton gasoline truck, shown in detail in Table I., was prepared by one of the largest operators of trucks in the East, with the recommendation that it be sent out to truck operators, requesting them to criticise it and submit their own costs for the information of the association.

TABLE I. COST PER DAY OPERATED FOR FIVE TON GASOLINE MOTOR TRUCK BASED ON 50 MILES PER DAY PER TRUCK AND THREE HUNDRED DAYS PER YEAR

	Amt.	Totals
Direct Charges		
Driver	$5.00	
Tires, bases on present cost of tires (guaranteed basis	3.00	
Oil, grease, kerosene, graphite, etc.	.50	
Gasoline, 3½ miles to gallon equals 14 gallons at 25c per gallon (average)	$3.50	$12.00
Indirect and Overhead Charges		
Depreciation, 20 per cent on $6,000 investmen	$4.00	
Interest, 6 per cent on $6,000 investment	1.20	
Insurance, averaged at $4.50 per year	1.50	
Garage rental, upkeep, etc., $300 per year per car	1.00	
Maintenance, minor repairs, supplies, tire chains, tools, lamps, springs, spark plugs, equipment, etc. (estimated)	1.00	
Overhaul, complete, prorated, $600.00 yearly	2.00	
License fee	.20	
Body upkeep, repairs, and painting	.30	11.20
Supervision, based on 10 per cent of above costs		2.32
Lost time—Time lost in repairs, no work, weather or other causes, 20 per cent of total, less gas, tires and oil, etc.	7.00	3.70
Total cost per day operated		$29.22

Based on Experience

The table is based upon actual experience. It is assumed that the truck makes 50 miles per day, and works 300 days per year. The direct charges are accumulating only while the truck is under operation; while the indirect are those which are accumulating whether the truck runs or not. Supervision includes all office expenses, stationery, printing, advertising, office help, telephone charges, outside men, etc. The cost of mechanical garage equipment, power, spare parts, etc., with interest on the same, and depreciation, is included in maintenance and overhaul.

Average operating conditions as to load were used in compiling this table. Up to the present time these have equaled a full load one way, or, for a 50-mile day, transportation of 125 ton-miles at about $0.24 per ton-mile. The costs are actual, no profit being included to cover risks, etc.

Table II. gives the costs as sent in by six trucking companies in answer to inquiry. The averages shown in the last two columns include the figures in Table I.

In considering the returns, it will be noted that many of the differences are in such elusive items as overhead, supervision and lost time. The averages in the last two columns were obtained by adding the amounts together and dividing by the number of reports on that item. The average total cost per day, while somewhat less in Table I., in the main agrees with it very well.

The figures as given apply particularly to operation of trucks in large fleets, such as those employed by the interurban haulage companies. They were furnished by companies operating out of New York City.

These figures will be more convenient for study if rearranged to show the overhead expenses in costs per year and the direct operation expenses in costs per mile, and to eliminate any inaccuracy due to the method used in computing the effect of idle time in Table III. Thus rearranged, the figures in Table II. are as follows:

TABLE II. COSTS REPORTED BY SIX MOTOR TRUCK OPERATORS, COMPILED ON THE SAME BASIS AS THE COSTS IN TABLE I.

Truck Operator—	A	B	C	D	E	F	Avg.	Total
Direct Charges, Per Day								
Driver	$ 5.00	$ 5.20	$ 5.00	$ 5.00	$ 5.17	$ 5.50	$5.13	
Tires	3.00	3.75	2.00	2.00	2.00	3.00	2.68	
Oil, etc.	.30	....	.30	.50	.25	.25	.35	
Gasoline	3.00	4.00	3.50	4.65	2.08	3.75	3.50	—$11.66
Indirect Charges, Per Day								
Depreciation	$ 3.50	$ 4.19	$ 3.60	$ 3.40	$ 3.67	$ 4.00	$3.77	
Interest	1.20	1.62	1.08	1.22	1.10	1.00	1.15	
Insurance	1.50	2.54	1.26	2.10	.86	.50	1.47	
Garage	1.00	1.2020	1.00	1.00	.89	1.00	1.01	
Maintenance	.50	....	.50	....	1.00	....	.75	
Overhaul	1.33	2.75	1.80	1.60	2.00	3.00	2.07	
License	.17	.27	.20	.20	.20	.20	.20	
Body upkeep	.25	..	.30	.10	.40	....	.27	— 10.69
Supervision	.50	2.93	2.05	1.90	....	....	1.90	1.90
Lost time	2.20	....	1.67	3.40	2.50	1.97	2.57	2.57
Total	$23.45	$28.09	$24.26	$27.07	$22.12	$24.17		$26.82

How the Idea Took Form

After the signing of the armistice in November, 1918, the truck industry, along with others, had to be poured back into the molds of peace. Many who were interested in the future of the truck believed this process would prove difficult. The winter of 1918 was conspicuous by an apparent lack of immediate demand for trucks. Production had outstripped the needs of American industry—as American industry understood the truck and its uses.

The only reason why this country was not absorbing the trucks as fast as they were made was because business men did not realize the wonderful possibilities of the truck as an element of national transportation. The time seemed ripe to let present and prospective truck owners known more of what the truck could do, for the great war created for the motor truck a thousand opportunities in its new uses.

The best way to prove the truck was to tell what the truck had accomplished.

A slogan that would arouse action was needed, a battle cry that would increase the use of the truck, a watchword that would unite all those interested in developing and extending the use of the truck.

"Ship by Truck" came as the answer.

The way in which it catches the memory and has come into common use in a few months has more than justified it.

Having the cause and the slogan, "Ship by Truck," it seemed advisable to spread the words as fast as possible.

Truck transportation means much more than the replacing of a horse and wagon with a power vehicle.

"Ship by Truck" sounds the end of an old order of freight movement.

From such beginnings came the Ship by Truck Bureau. How far it can go no one can say. At present sixty-five bureaus have been established. Through these bureaus Ship by Truck information is assembled and put in shape for distribution in every section of the country.

Brings New Era

It brings in a new era of moving goods in which the motor truck stands shoulder to shoulder with steam in national commerce.

The policy of shipping by truck has much to recommend it. For instance, when a shipment is entrusted to one of the several thousand truck transportation companies in this country, there is ample assurance of punctual delivery. These companies dispatch their trucks on regular schedules over carefully

planned routes. In addition to prompt delivery they offer you the extra precaution and special care in the handling of your goods. On these trips loads are handled only two, or at most three, times. The truck backs up to the shipping platform, the consignment is loaded, the truck starts off, and on schedule time arrives at its destination. On arrival the truck goes directly to the receiving platform of the consignee and there is unloaded. Breakage as a rule is in direct ratio to the number of times one's goods are handled; thus breakage is reduced to a minimum. By way of contrast, ask your traffic man to outline to you the course of an ordinary freight shipment from the purchaser to the field where it is to be used. Learn from him what delays are met with in the rehandling of such a shipment. Look into the complications of transfer and redistribution of belt road collections, freight houses and junction points. The ordinary freight shipment undergoes from six to eight handlings. The consequence is seen in delay, damage and labor expense.

TABLE IV. OVERHEAD CHARGES PER YEAR FOR A FIVE TON CAPACITY GASOLINE MOTOR TRUCK RUNNING AN AVERAGE OF 50 MILES PER DAY FOR 240 DAYS PER YEAR

Driver's Wages	$1,500.00
Depreciation (20 per cent on $6,000.00 investment)	1,200.00
Interest (6 per cent on $6,000.00 investment)	360.00
Insurance	450.00
Garage (rental, upkeep, etc.)	300.00
Maintenance, minor repairs and supplies, tires, chains, tools, lamps, springs, equipment, etc. (estimated)	300.00
Complete overhaul once a year	600.00
License fee	60.00
Body upkeep, repairs, painting, etc.	90.00
Supervision	696.00
Total per annum	$5,556.00
Overhead charges per day for 240 days in the year, actual operation	23.15
Overhead charges per mile for 50 miles per day	46.40c

Direct charges per day and per mile for five ton truck operated as above:

	Cost per day	Cost per mile
Tires (based on present guarantee)	$3.00	$0.06
Lubricants	.50	.01
Gasoline (3½ miles per gal., 14 gal) at $0.25)	3.50	.07
	$7.00	$0.14

Total of overhead and direct charges for 240 days per year operation, per day	$30.15
Per mile	60.30c
Cost per ton-mile for full loads one way and empty returning	24.12c
Cost per ton-mile for full loads one way and half loads returning	16c

In the above table the driver's wages have been placed under overhead charges because the driver is paid by the month and his wages continue even though the truck is idle because of repairs, bad weather or lack of business, unless, of course, the idleness should be of long duration, when the drive might be laid off.

Blessed Be the Mud; Pay Roll Had Not Come; Robber in Hard Luck

WUD, sticky, oily, slimy mud, has been the chief end of man apparently in most of the Wichita county oil fields for the past two weeks. Those who had to remain in the fields have had to eat mud, live in mud, and sleep in mud—almost. But there is at least one lease and one bunkhouse where they are singing with joyous voices, "Mud, Mud, Blessed Mud."

This is the lease and bunkhouse of the Gulf Production Company at Burkburnett.

On the night of October 9, which was cold and dark, and "Oh, So Wet," at two o'clock by the radio watch, a hardy villain with his face wrapped in a black handkerchief, entered the bunkhouse and ordered 20 shivering employees of the Gulf Company to get out of their nice warm bunks and line up while he searched the place for hidden wealth. They did so, and the bandit proceeded to go through the house. His reward was an average of $1.50 per victim.

The reason the men bless the mud is this: October ninth was to have been pay day. But soft tracks on the railroad and mud caused a delay of one day. The bandit had braved the mud, but the paymaster had not

STOCK CERTIFICATES KITED

Several instances of kiting stock certificates has been discovered by stock exchanges in Wichita Falls recently. A certificate for one share of Mona Marie was raised to 20 shares, and the same thing happened to certificates of the Waureka No. 1 and No. 2 companies. It is understood that these certificates were won in gambling houses at Ranger. Warning has been sent out to people not to buy stock from strangers .

CURRIE, GOETZ & HARRISON

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FIRST STATE BANK EASTLAND TEXAS

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Located in Eastland, Eastland County, Texas, the center of the best Texas oil fields, no one is qualified to know the needs of the oil man better than our officers and directors. We feel that we are able to handle any of the needs of the oil man, and offer him the very best banking connections to be had. Any collections to be made will be handled promptly. When you are in this territory, drop in and get acquainted. If you have mail coming, and want it taken care of, have it addressed The First State Bank, and we will hold it until your arrival.

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WEST COLUMBIA PRODUCTION

The average daily production of the West Columbia field for the past week, after deducting one-third for salt water and b. s., was distributed approximately as follows:

	Barrels
Gulf Production Co.	10,000
Humble Oil & Refining Co.	9,000
Crown Oil & Refining Co.	3,000
Texas Company	2,500
Sun Company	250
So. Petroleum & Refining Co.	35
Total	24,785

GOOD WELL AT WEST COLUMBIA

The Humble Oil & Refining Co.'s No. 5 Giraud at West Columbia was completed Wednesday morning with an initial production estimated to be around 8000 barrels of pipe line oil. It was pinched in and allowed to flow at the rate of 2000 barrels a day.

WEST COLUMBIA COMPLETIONS

The Gulf Production Co.'s No. 1 Hogg is testing around 3050 feet.

The Crown Oil & Refining Co.'s No. 1 Ilschewski, a work-over, is testing around 3200 feet.

The Texas Company's No. 29 Hogg has been abandoned around 1320 feet.

WEST COLUMBIA DRILLING REPORTS

The Humble Oil & Refining Co.'s No. 3 Bashara, which is down around 3374 feet, is preparing to sidetrack; No. 4 Bashara is drilling around 1240 feet; No. 3 Coons is drilling around 3240 feet; No. 11 Japhet is drilling around 2550 feet; No. 12 Japhet is drilling around 1650 feet; No. 13 Japhet is drilling around 2060 feet; No. 14 Japhet is drilling around 1260 feet; No. 2 Pipkin Carroll is going over four with six-inch at 2885 feet; No. 3 Marmion is drilling around 2860 feet; No. 6 Giraud is drilling around 2895 feet.

The Texas Company's No. 7 Hogg is sidetracking at 2308 feet; No. 8 Hogg is a derrick; No. 10 Hogg is working over; No. 12 Hogg is drilling around 3000 feet; No. 13 Hogg is drilling around 2540 feet; No. 14 Hogg is shut down temporarily; No. 15 Hogg is being worked over; No. 18 Hogg is sidetracking at 2451 feet; No. 20 Hogg is a location; No. 22 Hogg is reaming at 3047 feet; No. 23 Hogg is a derrick; Nos. 24 and 25 Hogg are repairing standard rigs; No. 26 Hogg is a location; No. 27 Hogg is reaming at 2910 feet; No. 28 Hogg is drilling around 2835 feet; No. 30 Hogg is drilling around 1795 feet; No. 31 Hogg is drilling around 1570 feet; No. 32 Hogg is repairing boiler; No. 4 Arnold is a derrick; No. 6 Arnold is shut down temporarily; Nos. 7, 8, 10, 11, 12 and 13 Arnold are locations; No. 15 Arnold is drilling around 1470 feet; No. 16 Arnold is a location.

The Gulf Production Co.'s No. 6 Ayers is drilling around 2700 feet; No. 2 McMeans is drilling around 2400 feet.

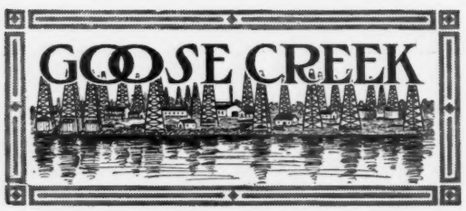
The Sta-Tex Oil Co.'s No. 1 Kruce is standing; No. 1 Mann has started drilling.

The Lucky Jim Oil Co.'s No. 1 Brown is down around 2435 feet.

The National Oil Co.'s No. 1 Rhodes is a derrick.

The International Oil Co.'s No. 1 Smith is fishing for tubing.

The Prudential Securities Co.'s No. 1 Bart-



GOOSE CREEK PRODUCTION

The average daily porduction of the Goose Creek field for the week just ended was distributed approximately as follows:

	Barrels
Gulf Production Co.	5,000
Humble Oil & Refining Co.	3,500
E. F. Simms & Co.	3,000
Gulf Coast-Crown	1,000
Sun Company	500
Hoffman Oil & Refining Co.	300
Mutual Oil Co.	225
Texas Company	100
Imperial Pet. Co.-Onondaga Pet. Co.	100
Miscellaneous	400
Total	14,125

GOOSE CREEK COMPLETIONS

The Gulf Coast Oil Corporation and the Crown Oil & Refining Co.'s No. 24 Gaillard is pumping 300 barrels at 2800 feet.

The Empire Gas & Fuel Co.'s No. 1 Adey was salt water at 2200 feet, and will be drilled deeper.

The Humble Oil & Refining Co.'s No. 6 Beaumont is waiting on standard rig at 2850 feet.

The Humble Oil & Refining Co.'s No. 8 Gaillard Peninsula had the casing collapse while bailing at 2880 feet.

The Gulf Coast Oil Corporation and the Crown Oil & Refining Co.'s No. 17 Gaillard, a work-over, is arranging to pump.

The Gulf Production Co.'s No. 13 Stateland is bailing at 3400 feet.

The Goose Creek Oil Corporation's No. 2 Freeman Stateland was a salt water well at 3335 feet.

The Pure Oil Co.'s No. 1 Duke was a water well at 2660 feet.

GOOSE CREEK DRILLING REPORT

The Humble Oil & Refining Co.'s No. 4 Jones Stateland is drilling around 3090 feet; No. 7 Jones Stateland is drilling around 3300 feet; No. 8 Jones Stateland is drilling around 1765 feet; No. 4 Beaumont is fishing for bailer.

The Gulf Production Co.'s No. 18 Stateland is drilling around 2500 feet, and No. 19 Stateland is drilling around 1900 feet.

The Gulf Coast Oil Corporation and the Crown Oil & Refining Co.'s No. 18 Gaillard is working over and is drilling around 2850 feet; No. 25 Gaillard is rigging up.

The Crown Oil & Refining Co.'s No. 4 Gillette, a work-over, is fishing for tubing; No. 2 Hog Island is standing at 3000 feet; No. 3 Hog Island is drilling around 3140 feet.

Texas Company's No. 15 Eisenhour is down around 3530 feet; No. 16 Eisenhour is down around 2930 feet, and is being held up on accouut of high water; No. 17 Eisenhour is a derrick.

The Ky-Tex Oil Co.'s No. 1 Jones is drilling around 2250 feet; No. 5 Jones is a derrick; No. 4 Mitchell is drilling around 1650 feet.

The Goose Creek Oil Corporation's No. 3

lett is reaming around 3335 feet.

The Big Belt Oil Co.'s No. 2 Hogg is standing at 3040 feet.

The Werean Oil Co.'s No. 1 McFarland is fishing at 1920 feet.

The Southern Petroleum & Refining Co.'s No. 1 Humble-Sour Lake is drilling around 1940 feet; No. 1 Johnson is a derrick.

The Sun Company's No. 2 Robinson is drilling around 2920 feet (corrected depth); No. 3 Robinson is drilling around 2900 feet.

The Inter-State A. & M. Development Co.'s No. 1 Bailey is a derrick.

SARATOGA PRODUCTION

The average daily production of the Saratoga field for the past week was approximately 1100 barrels.

SARATOGA COMPLETIONS

The Sun Co.'s No. 133 McShane is bailing sand and mud around 1400 feet.

The Rio-Bravo Oil Co.'s No. 52-J, which got salt water at 1360 feet has perforated around 1100 feet.

SARATOGA DRILLING REPORT

The Texas Co.'s No. 4 Ogden has a fishing job around 2910 feet and may be abandoned.

Freeman Stateland is drilling around 2855 feet; No. 4 Freeman Stateland is a location.

The Sammies Oil Co.'s No. 1 Highsmith is a location.

F. B. West's No. 3 Wright is standing.

The Tex-Washington Oil Co.'s No. 1 Bryan is drilling around 1635 feet; No. 1 Fitzgerald is rigging up.

The Spokane Oil Co.'s No. 1 Spillman Island is drilling around 800 feet.

The Surety Oil Co.'s No. 5 Jones is a derrick.

The Sun Company's No. 6 Wright is a derrick.

The Majestic Oil Co.'s No. 3 Dolan is drilling deeper at 2200 feet; No. 4 Dolan is working over.

The Allison-Hugo Syndicate's No. 1 Atkinson Island is drilling around 1860 feet.

E. F. Simms & Co.'s No. 13 Smith is drilling around 2300 feet; No. 24 Smith is standing at 2500 feet; No. 27 Smith is drilling around 2400 feet; No. 29 Smith is rigging up; No. 30 Smith is drilling around 1000 feet; No. 31 Smith is rigging up; No. 7 Schilling is drilling around 3200 feet; No. 20 Schilling is working over.

MARKHAM PRODUCTION

The average daily production of the Markham field for the past week was approximately 200 barrels.

MARKHAM DRILLING REPORT

The Clem Oil Co.'s No. 14 Myers, which had an initial production on the pump of 60 barrels, is being drilled deeper. It is now down around 1480 feet and is showing both gas and oil.

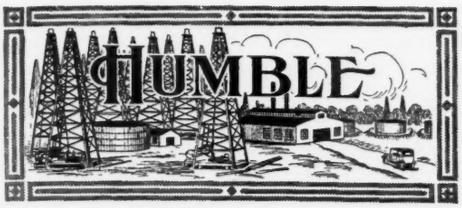
The Texas Co.'s No. 6 Hudson has started drilling.

The Lion Oil Co.'s No. 1 Myers is waiting on heavier rig.

Dr. P. S. Griffith's No. 6 Northern Irrigation is rigged up waiting on improved weather conditions to start drilling.

GATHERING OIL FIELD DATA

Dr. E. H. Sellards, geologist, Bureau of Economic Geology and Technology, University of Texas, with the approval of the directors, has addressed a circular letter to all oil producing companies in Texas asking their co-operation with the bureau in preserving and furnishing for general geologic studies certain data obtained while exploring for oil. In this circular it is suggested that while a part of the data accumulated in developing an oil field is confidential in nature and not available for publication, nevertheless there must be acquired a considerable body of information that may not necessarily be confidential, particularly after the general conditions in a field have become known. To preserve data of this kind and to utilize them in publications relating to the oil fields, it is urged, cannot fail to be of value to the petroleum industry.



HUMBLE PRODUCTION

The average daily production for Humble field during the past week was distributed approximately as follows:

	Barrels.
Texas Co.	4495
Humble Oil & Ref. Co.	200
Invincible Oil Co.	800
Southern Pet. Co.	285
Galena Signal Co.	845
Sun Co.	150
J. M. West et al.	80
Gulf Coast Oil Corpn.	300
Castell Oil Co.	100
Gulf Production Co.	60
Miscellaneous	800
Total	8115
Last week	7876

HUMBLE PIPE LINE RUNS

The average daily pipe line runs from Humble field for the week just ended was approximately as follows:

	Barrels.
Texas Pipe Line Co.	6355
Sun Pipe Line Co.	625
Galena Signal Oil Co.	700
Gulf Pipe Line Co.	250
Total	7910

HUMBLE COMPLETIONS

The Texas Co.'s No. 239 Landslide is bailing at 2760 feet.

The Gulf Coast Oil Corporation and the Crown Oil & Refining Co.'s No. 46 Hermann was a salt water well at 1150 feet.

The Manker Oil Co.'s No. 12 Hargraves was a salt water well at 1185 feet.

Crown Pet. Co.'s No. 7 Hirsch flowed from 200 to 300 barrels one day and is making water.

HUMBLE DRILLING REPORT

The Gulf Coast Oil Corporation and the Crown Oil & Refining Co.'s No. 2 Holmes is drilling around 1020 feet.

The Syrian-American Oil Co.'s Nos. 5 and 6 McDonald are derricks.

The Circle Oil Co.'s No. 8 Bart is drilling around 800 feet.

The Gulf Coast Development Co.'s No. 1 Humble-Sour Lake is setting six inch at 2400 feet.

The Texas Co.'s No. 237 Landslide is drilling around 2400 feet; No. 240 Landslide is a derrick; No. 173 Hermann is drilling around 2010 feet; 179 Hermann is drilling around 2010 feet; No. 180 Hermann is a derrick; No. 28 Koehler is drilling around 3010 feet; No. 15 Burt 100 acres is fishing at 2024 feet.

FOAMITE COMPANY HAS HOUSTON OFFICE

The Foamite Firefoam Company has opened Texas headquarters at 1106 Rusk Avenue, Houston, to serve the territory comprising Texas and Louisiana, with M. H. Bottom in charge. The Approved Fire Apparatus Company has headquarters at the same address where a line of Foamite engines, hand extinguishers, buckets, etc., is carried for Houston and vicinity.

INVADER SECURES HOMER LEASES

The Invaders Oil & Refining Company several weeks ago secured more than 1000 acres in leases in the new Louisiana field near Homer. The first well is now drilling with rotary tools and Ed Ross, formerly with the Producers & Refiners Corporation, is in charge of Louisiana operations.

SOUR LAKE PRODUCTION

The average daily production for Sour Lake field during the past week was distributed approximately as follows:

	Barrels.
Texas Co.	2200
Gulf Production Co.	2300
Humble Oil & Ref. Co.	1250
Yount-Lee Oil Co.	500
Farrish & Ireland	165
Lake Oil Co.	330
Theis Oil Co.	160
Sun Co.	100
Miscellaneous	800
Total	7805

SOUR LAKE PIPE LINE RUNS

The average daily pipe line runs of the Sour Lake field during the past week were distributed approximately as follows:

	Barrels.
Texas Pipe Line Co.	2694
Gulf Pipe Line Co.	1850
Sun Pipe Line Co.	1950
Total	6494

SOUR LAKE COMPLETIONS

The Texas Co.'s No. 207 Fee, a work over, is pumping 15 barrels.

The Gulf Production Co.'s No. 24 Hardin, a work over, is bailing at 1950 feet.

SOUR LAKE DRILLING REPORT

The Gulf Production Co.'s No. 1 Minor is drilling around 2725 feet.

The Texas Co.'s No. 221 Fee is rigging up to work over; No. 298 Fee is a derrick; No. 300 Fee is drilling around 1425 feet.

The Yount-Lee Oil Co.'s No. 1 Glass is shut down at 1700 feet.

PIERCE OFFICIALS ARRIVE IN TAMPICO

J. N. Galbraith, vice president of the Pierce Oil Corporation; W. H. Mealy, general manager for the company in Mexico, with headquarters at Mexico City; D. D. Freeborn, transportation manager, and R. G. Veramendi, auditor, arrived in Tampico last week.

CONFER FOR PROTECTION

Representatives of the Mexican oil companies met last week with the various Mexican chiefs for the purpose of discussing better plans for the protection of the oil interests. General Francisco Murgia presided at the conference. The meeting is reported in an amicable agreement for the prosecution of the bandits.

AMERICAN SCHOOL OPENS

The American school at Tampico has opened for the year, and has enrollment of more than 100 pupils in its various grades, which extend from the primary to the high school.

TAMPICO CONTRIBUTES

Corpus Christi flood victims will be benefited by more than $4,000 which has been raised in Tampico. The largest donations reported were $1,000 from the Tampico Red Cross and $500 by the American Chamber of Commerce. The remainder of the amount, as usual, was furnished by the employes of the oil companies.

Jo P. Cappeau, geologist, announces the opening of an office in New York City, Room 907, 61 Broadway. He has forty years experience in the oil and gas industry.

EDGERLY PRODUCTION

The average daily production of the Edgerly field for the past week was approximately 1000 barrels.

EDGERLY COMPLETIONS

The Edgerly Oil & Mining Co.'s No. 2 Wilson is arranging to pump at 3046 feet.

EDGERLY DRILLING REPORT

The Gulf Refining Co.'s No. 18 Bright Penn is shut down at 3120 feet; No. 30 Bright Penn is drilling around 2300 feet and No. 3 Paraffine is rigging up.

VINTON PRODUCTION

The average daily production of the Vinton field for the past week was approximately 4100 barrels.

VINTON COMPLETIONS

The Vinton Petroleum Co.'s No. 10 Harmony was a dry hole at 2700 feet.

VINTON DRILLING REPORT.

The Owl Oil Co.'s No. 1 Gray is standing at 3040 feet.

Brownie Babbitt's No. 6 Johnson is standing at 3025 feet.

The Gulf Coast Oil Co.'s No. 8 Vincent is drilling deeper at 2755 feet.

The Gum Cove Oil Co.'s No. 6 Lucky Four Acres is drilling around 2850 feet; No. 7 Lucky Four Acres is drilling around 2030 feet.

The Texas Co.'s No. 6 Vincent is drilling around 2360 feet.

The Gulf Refining Co.'s No. 10 Star Vincent is drilling around 2400 feet; No. 48 G. N. Gray is drilling around 2090 feet.

Goudchaux Syndicate's No. 1 Holcombe is drilling around 2700 feet.

Shepparson and Lucy's No. 1 N. Gray is drilling around 2865 feet.

WHY VACANT STRIPS EXIST

"The greater the value of the land, the greater the need for accurate work on the part of the surveyor," was the statement of E. C. Oates, field engineer for the Sinclair Gulf Oil Company, when he was asked to explain why the old surveys were inaccurate in many instances and vacant strips occasionally came to light.

"Take a watch maker, he does not make much of an attempt to secure accuracy in a dollar watch, because it is not worth it, but when he comes to turn out a first class and expensive time piece he gives it the attention it demands and the same is true of the surveyors in the early days.

"In those times the land was worth something between 15 and 25 cents an acre. The surveyor was paid $5 a day and the owner of the land furnished a chainman or paid a little extra for the surveyor to supply him. In using the Mexican vara as a basis for measurement it was very easy to make a mistake of a few feet, which would make a difference of a few acres, possibly 15 to 25, in the survey of a league. The surveyor would announce that an error had been made and that it must be done over. The owner would answer him to the effect that what is a few acres of land, more or less and let the survey stand as to correct the error would cost more than the land was worth."

J. H. House of Tampico was in Houston during the past week. Mr. House says that a big amount of construction work is under way in the Tampico district.

SOMERSET PRODUCTION

The average daily production of the Somerset field for the past week was approximately 290 barrels.

SOMERSET COMPLETIONS

The Gulf Production Co.'s No. 5 Carruthers is testing around 1350 feet.

The Slimp Oil Co.'s No. 1 James is bailing at 1530 feet.

The Blue Bonnet Corpn.'s No. 2 Tulschke has perforated around 1400 feet.

Wolf et al.'s No. 1 Tulschke is testing at 1400 feet.

The Gulf Production Co.'s No. 3 Shaw is arranging to pump at 1350 feet.

The Pioneer Oil Co.'s No. 1 James is testing at 1530 feet.

SOMERSET DRILLING REPORT

The Arrowhead Oil Co.'s No. 2 McClosky is drilling around 300 feet.

Steuben and McClure's No. 1 Kaufmann is a derrick, and No. 2 Avant is drilling around 1100 feet.

The Grayburg Oil Co.'s No. 17 Hartung is drilling around 2415 feet, and No. 17 Fowler is a derrick.

C. L. Witherspoon's No. 2 LeGrange is drilling around 1375 feet with a showing of oil, and No. 5 LeGrange is rigging up.

Whittaker Brothers No. 1 Kay is standing at 610 feet.

RULING OKLAHOMA INDIAN LEASES

TO WHOM IT MAY CONCERN:

I am in receipt of a letter from Honorable Cato Sells, Commissioner of Indian Affairs, dated September 24, 1919, authorizing me to give public notice relative to leases made by full blood heirs in accordance with a decision of the department of the interior, as substantially follows:

That the owner of a commercial lease made by full blood heirs of a deceased citizen of the Five Civilized Tribes at a time prior to June 2, 1919, the date of the decision of the supreme court in the case of Parker vs. Eastman Richards, et al., will be entitled to hold same where no fraud is alleged, by making application for the approval of same within sixty days from the date of this notice, and complying with certain conditions.

The superintendent is authorized to receive and forward for consideration, with such report and recommendation as he may deem proper in each case, applications for approval of commercial leases approved by a county court on or before June, 1919, and assignments thereof; that the applicant be required to show that the lessors through whom he claims are the only heirs of the deceased allottee, to furnish an abstract of title to show that there are no conflicting leases of record, and that in case of conflicting leases, all interested parties be given an opportunity to present whatever showing they desire before the cases are submittd to the department for action; that they be required to show the amount of development work performed and the present production of oil and gas; and that the applicant agree that the rates of royalty be not less than those prescribed in the regulations, and that all payments shall be payable to the superintendent for the benefit of the full blood heirs.

No leases will be recognized executed after June 2, 1919, except those on departmental form.

Any additional information at hand will be gladly furnished. Sincerely yours,

GABE E. PARKER,
Superintendent for the Five Civilized Tribes.

HULL PRODUCTION

The average daily production of the Hull field for the past week was distributed approximately as follows:

Republic Production Co.	2500
Gulf Production Co.	1000
Big Four Oil Co.	350
Humble Oil and Refining Co.	125
Sun Co.	75
Texas Co.	75
Total	4125
Last week	5025

HULL COMPLETIONS

The Texas Co.'s No. 1 Palmer, after being worked over is arranging to pump at 2200 feet.

HULL DRILLING REPORT

The Texas Co.'s No. 2 A. Merchant is drilling around 2200 feet; No. 1 Hazel Oil Co. is drilling around 2590 feet, and No. 1 Canter is rigging up.

The Crown Oil & Refining Co.'s No. 1 Palmer is drilling around 1350 feet and No. 1 Hankamer is drilling around 650 feet.

The Gulf-Texas Co.'s No. 4 Morris Phillips is a derrick and No. 6 Morris Phillips is reaming at 2600 feet.

The Gulf Production Co.'s No. 3 Phoenix is drilling around 1970 feet; No. 4 Phoenix is drilling around 1750 feet.

The Higgins Fuel & Oil Co.'s No. 1 Smith is drilling around 660 feet.

The Empire Gas & Fuel Co.'s No. 1 Barngrover is drilling around 1200 feet.

The Houston Production Co.'s No. 1 Baldwin is standing around 2100 feet.

The Humble Oil & Refining Co.'s No. 2 Palmer is drilling around 2460 feet; No. 1 Stovall is losing returns around 700 feet.

The Sun Co.'s No. 2 Carr is drilling around 820 feet, No. 1 Wheelock is a derrick.

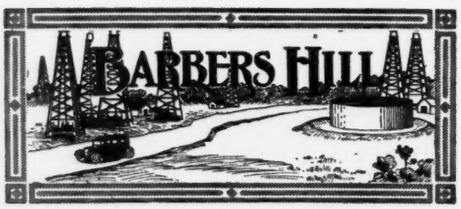
The Republic Production Co.'s No. 24 Dolbear is drilling around 1300 feet (corrected depth); No. 25 Dolbear is down around 1900 feet, No. 26 Dolbear is rigging up.

The Summerow Oil Co.'s No. 1 Pounds is standing at 480 feet.

The Big Four Oil Co.'s No. 1 Hankamer, a work over, is sidetracking.

The Eagle Point Oil Co.'s No. 1 Devore is a derrick.

J. R. Edwards of the Reading Iron Works, formerly with the A. M. Byers Pipe Co., is in Dallas to open Southwestern headquarters for his company. He states that the Reading Works have not been hurt by the steel strike, the men failing to respond when the strike order was issued.



BARBERS HILL PRODUCTION

The average daily production of the Barbers Hill field for the past week was approximately 530 barrels.

BARBERS HILL COMPLETIONS

The Collier-Benckenstein-Shearer Syndicate's No. 2 Richardson was completed Tuesday morning with an initial production of 500 barrels by heads at a depth of 2400 feet.

BARBERS HILL DRILLING REPORT

The Texas Company's No. 1 Old River is fishing at 2500 feet, and No. 2 E. Fisher is fishing around 1900 feet.

The United Petroleum Co. and Benckenstein Syndicate's No. 3 Richardson, which has been shut down waiting on the completion of the Collier-Benckenstein-Shearer test, has resumed drilling at 2385 feet, and will test in the same sand.

The United Petroleum Co.'s No. 4 E. Fisher is a derrick.

L. F. Benckenstein Syndicate's No. 2 Chambers County Agricultural is a derrick.

The Kavanaugh Petroleum Co.'s No. 1 Pyramid Fisher is drilling around 1130 feet, and No. 1 Chambers County Agricultural is waiting on heavy rig.

The United Petroleum Co. and Benckenstein Syndicate's No. 3 Fisher is standing at 950 feet, and No. 1 Old River is a location.

The Gulf Dome Oil Co.'s No. 1 E. W. Barber is a derrick.

The Patullo Higgins Junior Oil Co.'s No. 1 Winfrey is a location.

TO DRILL MYERS RANCH

Dr. MacGregor and associates of El Paso, Texas, have consolidated with parties owning leases on the Andy Myers Ranch thirteen miles southeast of Jacksboro, paid up all rentals on this ranch of some 5000 acres, and purchased considerable adjoining acreage, and are now preparing to drill a deep test on the Myers Ranch to 4500 feet unless oil is encountered before that depth is reached. This well will be started within the next twenty days, according to Dr. MacGregor.

INCORPORATION OF CITY ATTACKED

Quo warranto proceedings have been brought against the organization of Waggoner City, which recently voted to incorporate and elected officers. It is claimed that the act of incorporation was illegal, because the petition was filed under the wrong law and because persons who were not qualified electors voted.

Among those who brought the suit are prominent oil operators of the district. A temporary restraining order has been issued against the officials elected, to prevent them from acting in an official capacity until the hearing of the case on October 17.

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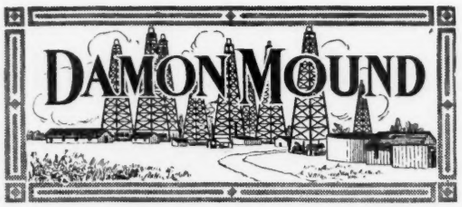


DAMON MOUND PRODUCTION

The average daily production of the Damon Mound field for the past week was approximately 1250 barrels.

DAMON MOUND DRILLING REPORT

The Sinclair Gulf Oil Co.'s No. 2 Ptak is drilling around 4138 feet; No. 15 Bryan is drilling around 1900 feet; No. 9 Jackson is drilling around 1470 feet; No. 1 Sinclair Fee is drilling around 1780 feet; No. 8 Masterson is drilling around 1660 feet; No. 1 N. T. Masterson is sidetracking at 1570 feet; No. 3 Becker is fishing at 3614 feet.

PUNCTUATION WAS WRONG

The poor woman of Shoreham, whose husband was going to sea, handed, through the clerk to the parson ,this public prayer.

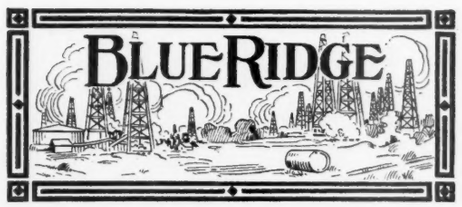
"A man going to sea, his wife desires the prayers of the congregation."

The parson ,pointing it in his own way, read to the ears of his flock:

"A man going to see his wife desires the prayers of the congregation."—Tid-Bits.

NEW ZELNICKER BULLETIN

The Walter A. Zelnicker Supply Company, St. Louis, Mo., has just issued Bulletin No. 270, which lists rails, track accessories, locomotives, cars, trucks, machinery for power and industrial plants, contractors' equipment, every kind of pipe, steel piling and all kinds of tanks.



BLUE RIDGE PRODUCTION

The average daily production of the Blue Ridge field for the past week was approximately 75 barrels.

BLUE RIDGE DRILLING REPORT

R. C. Duff's No. 1 Soderberg is drilling around 780 feet. At a little below 700 feet a showing of oil and gas was encountered, but was passed up.

The West Production Co.'s No. 1 Lescher is still being worked on to make it a producer. The same company's No. 1 Overly is a derrick as is No. 1 Knight.

The Sinclair Gulf Oil Co.'s No. 1 Davidson is drilling around 1700 feet.

The Texas Co.'s No. 1 Robison is down around 1150 feet; No. 1 Bassett Blakeley is drilling around 1900 feet.

The Gulf Production Co.'s No. 1-B Bassett Blakeley is drilling around 2000 feet.

The Deep Blue Ridge Oil Co.'s No. 1 West is drilling around 650 feet.

J. H. Pressley of the Sun Company in Dallas, is a sport fan of a new stripe. He bet that Chicago would win three games out of the first five in the world series, after he had entered a wager that Cincinnati would cop the first one. He centered his big bet on Chicago, and his smaller money on the Reds, game by game. In this way he had a chance to back his judgment, and at the same time to break even in case his judgment should prove bad.

SPINDLE TOP PRODUCTION

The average daily production of the Spindle Top field for the past week was approximately 950 barrels.

SPINDLE TOP DRILLING REPORT

The Crown Oil & Refining Co.'s No. 1 McFadden is drilling around 1400 feet.

Wilson & Broach's No. 1 Greer is fishing around 2880 feet.

The Gulf Production Co.'s No. 2 McFadden is sidetracking around 3150 feet.

The Elgin Oil & Refining Co.'s No. 1 Howth is rigging up.

The Texas Co.'s No. 1 Fee is drilling around 2600 feet and No. 2 Fee is drilling around 2720 feet.

The Baker Oil Co.'s No. 5 Trembly is drilling around 800 feet.

NOT AN OIL MAN

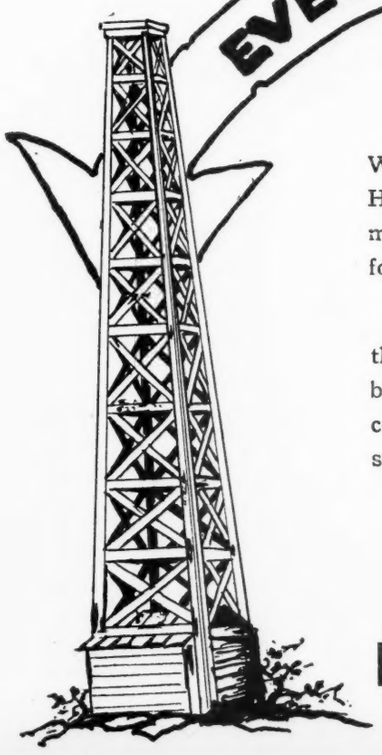
He was such a bashful young man that Millicent began to feel it was time to give him a little assistance. So one evening when they sat alone in the parlor she opened up the subject thoroughly.

"Isn't it funny?" she remarked. "The length of a man's arm is exactly the circumference of a lady's waist."

Here was a chance, surely! Even the slowest of mortals would seize it.

"How very strange!" lisped the bashful one. "If we had a piece of string we could measure it and see."

And so Millicent has changed her lover.



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TAMPICO DRILLING REPORT

Comales No. 1 of the Island Oil & Transport Corporation, at Comales, is drilling around 1770 feet.

Moralillo, same company, clearing location.

Harmon No. 2 of the Mexico-Boston Leasing Co., is drilling around 710 feet.

Tamboyoche No. 5, on 7, Tamboyoche, of the Cia. Mexicana de Combustibles, S. A., started drilling.

La Atlantica Company's well on lot 64, Amatlan, is drilling around 760 feet.

Kern-Mex Oil Fields, Ltd., Panuco district, is underreaming.

Los Naranjos No. 5, of the Aguila Company, is drilling around 1722 feet.

Los Naranjos No. 9 is drilling around 1312 feet.

Los Naranjos No. 10, same company, clearing location.

Perez No. 1 is cleaning hole at 1380 feet.

Chapopote No. 3, same company, work suspended account of bad roads.

San Geronimo, same company, drilling around 1710 feet.

NEW TANKER

The S. S. Mirita has been added to the fleet of tankers of the Freeport & Mexican Fuel Oil Corporation. It has a capacity of 55,000 barrels, and its first trip for its new owners was a cargo of crude for New Orleans.

Atlantica and Port Lobus Oil Companies in Mexico Combine

THE Atlantica Oil Producing Co., a subsidiary of the Atlantic Oil & Refining Co., and the Port Lobus Oil Co. have been merged and will be operated by a holding company recently organized in the United States. The name of the new organization is the Atlantica-Port Lobos Oil Corporation.

The officers are: William M. Irish vice president of the Atlantic Refining Co., president; Rufus L. Patterson, founder of the Port Lobos company, T. Sivewright Catto, chairman of the British ministry of food during the war, and R. D. Leonard, vice presidents. The board of directors are Jas. B. Duke, J. W. Van Dyke, president of the Atlantic Refining Co.; Rufus L. Patterson, W. M. Irish, T. Sivewright Catto, Vernon C. Brown, representing the Berwin-White coal interests; Henry R. Hoyt, and W. D. Anderson and John H. Stone, respectively, secretary and counsel of the Atlantic Refining Co.

Port Lobos is a comparatively new company, having started oil delivery from Mexico in August, 1918, and shipped 7,500,000 barrels of oil the first year. Its holdings in Mexico aggregate over 100,000 acres in the light oil producing fields of that country. It has its own railroads, pipe lines, floating equipment, pumping and loading station. The latter has sufficient sea lines to load several tankers at the same time, with a pumping capacity capable of putting oil in tank steamers at the rate of 6000 barrels an hour.

The company's station at Port Lobos extends for three miles on the Gulf, and adjoins the Atlantic Refining Co.'s station. The latter company is now erecting a 20,000 barrel refinery and large tank storage facilities on this site. This property is located behind a natural protected harbor where ships can be loaded under all weather conditions.

Large additions are to be made to present facilities from new money, so as to enlarge the company's production of fuel oil and casing head gasoline. The foreign business is also to be extended considerably, particularly in the fuel oil line. Vice President Sivewright sailed for England recently, and it is believed his trip is in connection with effecting trade alliances with a number of foreign companies.

CARRANZA IN THE RED COLUMN

Carranza's line of legislation as regards foreign investment in Mexico is lined up with Bolshevism and is keeping that country outside of civilization, in the opinion of several Mexican statesmen as well as the newspapers of that country, according to advices received at Washington.

They declare that there is no country on earth sufficiently powerful to stand and make enemies as rapidly as Carranza is doing for Mexico, and they have joined forces to combat his attempts at confiscatory legislation as regards private property.

INTERNATIONAL STARTS WORK

The International Petroleum Co. has begun work on the construction of its terminal, and at present has a force of men clearing off the site, and it is planned to have everything in readiness to begin active construction work as soon as the material for the machinery, pipe lines, tanks and sea loading lines arrive.

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NEW WELLS IN CALIFORNIA

New wells started is the order of the day in California, reports to the state oil and gas supervisor showing an increase for the past week over the first week in the month. Four of the new wells are in the Richfield district, and the same number was started in the Kern River field.

Good Well in Section 36-20-23

The Standard Oil Co.'s well on the Carman lease in section 36-20-23 is good for about 4500 barrels. It is 2690 feet deep.

BLACKMER COMPANY OPENS HOUSTON OFFICE

The Blackmer Rotary Pump Company of Detroit, Mich., has opened an office at 801 Mason Building, Houston, Texas, where D. M. King, in charge of business for the company in Texas and Louisiana, will have his headquarters. The Blackmer Rotary Pump Company is not unknown in Texas and it is likely it will become better known in the next few weeks.

SNOW IN WYOMING

Most of the fields of Wyoming last week were wrapped in a blanket of snow, and as a result the oil field roads are practically impassable. The derrick floor of the Lincoln Idaho Oil Company, in the Dry Piney field, is about 7500 feet above sea level, and oil field men from the fields of Texas or California do not like work in that kind of atmosphere. They must be robust men to stand the hard work.

The Standard Oil Company of Indiana is building a cracking plant at Laramie. This company has refineries operating at Greybull and Casper. The Midwest refinery at Laramie will cost about $1,000,000, a similar amount to that being spent by the Standard. Two deep tests for Lance Creek are planned, one well now below 2400 feet to be used for one of the tests. Special cables are being sent in.

HUMBLE BUILDING TOPPING PLANT NEAR DUBLIN

Scientific economy is seen in the action of the Humble Oil & Refining Company in building a topping plant near Dublin, to top crude produced in that section before storing it.

The greatest objection to storing high gravity crude has been evaporation of the more volatile elements and the consequent danger of fire therefrom. By topping the crude the Humble will save the gasoline content of the crude in its entirety, reduce fire hazard, and have the gasoline for sale while it stores the bulk of the topped product for future use when pipe line facilities can handle it.

MANY DUSTERS IN PENNSYLVANIA

The past two weeks have seen the completion of a number of dusters in the Pennsylvania fields, but in several instances shots have increased the flow of wells which had been dwindling. In Vinton County, the Ohio Fuel Supply Company completed a five and a half million cubic feet gasser at 2680 feet. The Cedar Falls Oil, Gas & Refining Company is drilling on the John Hoskins farm in Jackson township, and has reached the sand. In Athens County, Jennings Coal Company's No. 5 was a duster. A light pumper was completed in the Marietta district in Washington County. Drilling is starting on several new wells on Mud River. Two wells were shot in Kanawha County with splendid results.

Activities are noted in the Chatham field in Ohio, where the shallow sand has been found to be profitable. Several pumpers ranging from 1 to 50 barrels, besides a greater number of dry holes, tell the story.

One barrel pumper resulted from the McCoy well in Harrisville townsite. A good gas well was completed in Jefferson township, Knox County. Several gassers and a number of dusters were reported from other counties.

TO DRILL A TEST IN PALESTINE

Arthur G. Dana of Independence, Kansas, is now in Palestine and is preparing to drill a test for the Standard Oil Company at Hebron. When Turkey was drawn into the world war he was busy building a road from Jerusalem, and he and his party moved out in a hurry. He had shipped from this country one of the best drilling outfits ever assembled for use in a foreign country, and this outfit has been in storage waiting for peace. His wife sailed this week from New York to join her husband.

W. W. Rowe, member of the firm of drilling contractors, Rowe & Rowe, has been married to Miss Katie Crouch of Alton, Tennessee. Mr. Rowe recently moved to Homer, Louisiana, to take part in the development of the new oil field there.

Chair of Practical Technology at Rice Institute May Become Realty

SEVERAL matters of practical interest to oil men in the Gulf Coast section were discussed at the first meeting of the recently formed oil industries committee of the Houston Chamber of Commerce Wednesday. Due to the fact that several members of the committee were out of the city, only five were present at the meeting, and definite organization of the committee was postponed until next Wednesday afternoon.

The proposition of a chair of practical petroleum technology, geology and chemistry at Rice Institute, located at Houston, occupied a considerable part of the discussion, and from a report made by Manager Brickey of the Houston Chamber of Commerce, and the attitude of the committee members present, it may be regarded as probable that such a chair will be instituted at Rice Institute. It was brought out at the meeting that if the Institute will start such a chair, lecturers from the various oil companies in the Gulf Coast section will be glad to appear before the students taking the course, with practical lectures.

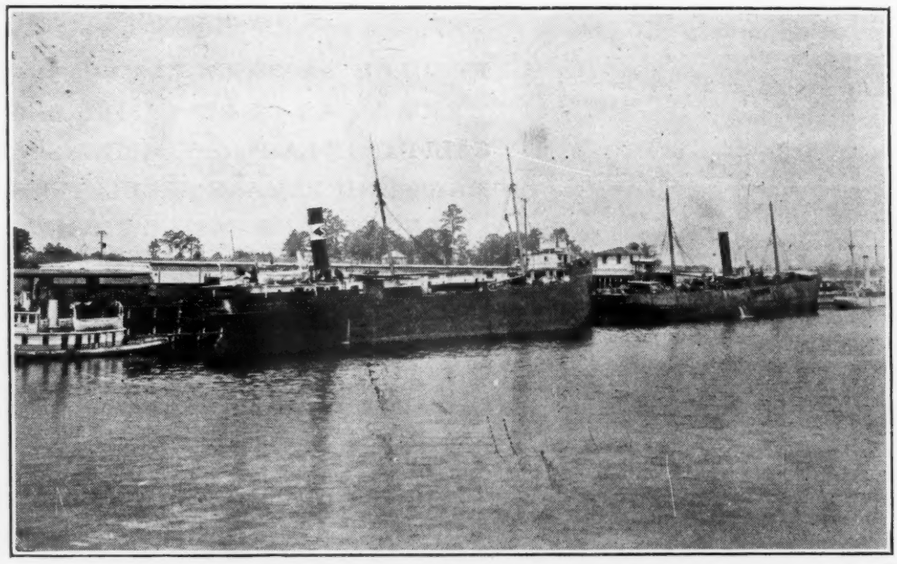
The advantages which Houston has for a chair in technology—fields near the city, and practical oil men residing in this district—were pointed out, and the good to be accomplished by such a department was recognized by all present.

R. L. Young, one of the committee members, made the assertion that the very foundation of the petroleum industry is the making of wells, and added that few good well-makers can be found today. It was agreed that a course giving the fundamentals of the engineering end of securing oil production, backed up by practical observation in the fields near Houston, would form a course from which the industry on the Gulf Coast will obtain much good.

The same application was made to the refining end of the industry. Erich Kuehnle spoke at length on this subject and declared than an excellent department of petroleum chemistry could be developed at Rice with the assistance which would be forthcoming from the industry in South Texas.

The name of J. S. Cullinan was added to the committee before adjournment. Those present were J. A. Carr, R. L. Young, J. J. Castell, Erich Kuehnle and R. L. Dudley. Garland S. Brickey, manager of the Chamber of Commerce, presided.

C. D. Johnson of the T. & P., A. B. Waldron of the I. & G. N., and J. A. Byron of the Ft. W. & D. C. railroad, comprise the committee recently appointed in Fort Worth to work out some plan for the alleviation of the freight congestion at that point.



THE HOUSTON SHIP CHANNEL AT THE TURNING BASIN

WILDCATS FROM ALL SECTIONS

North Texas Wildcats

Wise County—Union Oil Assn.'s No. 1 J. G. Stevens, shut down, 1496 feet; Bridgeport Oil & Gas Co.'s No. 1 Dethloff, fishing, 935 feet; Lubbock-Bridgeport Dev. Co.'s No. 1 Rominger, shut down, 1585 feet; Alvord Oil & Gas Co.'s No. 1 Parrish, rig.

Grayson County—Johnson et al.'s No. 1 Handy & Thorn, shut down, 2735 feet; Peters Oil & Gas Co.'s No. 1 Jackson, drilling, 800 feet; Viola Pet. Co.'s No. 1 I. & J. Exstein, rig.

Montague County—Big Six Oil Co.'s No. 1 Dunn, shut down, 600 feet; Beaver Valley Oil Co.'s No. 1 Hodges, shut down, 2485 feet; Nacona Oil & Gas Co.'s No. 1 Lemons, shut down, 2235 feet; Red River Valley Oil Co.'s No. 1 Jones, drilling, 515 feet.

Cooke County—Muenster Oil Co.'s No. 1 Yosten, shut down, 1535 feet; McEllis Oil Co.'s Nol Slaughter, shut down, 140 feet; McBond Oil & Gas Co.'s No. 1 Frazier, rig; and Myra Tex Oil Co.'s No. 1 Davidson, rig.

Oldham County—Linox & Hester's No. 1 Laudergrin, shut down, 745 feet; Benedum-Trees' No. 1 Sheldon, drilling, 685 feet; and Gordon Trust Co.'s No. 1 Herring, location.

Potter County—Amarillo Oil & Gas Co.'s No. 4 Masterson, derrick and No. 1 Lee Bivins, drilling, 1610 feet; Ranch Creek Oil Co.'s No. 1 Masterson, drilling, 2525 feet; Haines Oil Co.'s No. 1 Trigg, drilling, 2890 feet; Seven States Pet. Co.'s No. 1 Holbrook, rigging cable tools; Bonita Oil Co.'s No. 1 Bivins, location; White & Parks No. 1 Masterson, tools on ground; Jacobs et al.'s No. 1 Bivins, rigging up; Emerald Oil Co.'s No. 1 Masterson, fishing, 664 feet; and Miller Oil & Ref. Co.'s No. 1 Tanner, drilling, 1190 feet.

Randall County—Palo Duro Oil Co.'s No. 1 Arnold, drilling, 1525 feet.

Wheeler County—Texas Northwest Pet. Co.'s No. 1 Mertin, tools on ground; and Trayole Oil & Gas Co.'s No. 1 Wallace, location.

Armstrong County—Goodnight Oil Co.'s No. 1 Goodnight, drilling, 325 feet; Armstrong Oil Co.'s No. 1 Bagwell, location.

Donley County—Leila Lake Oil Assn.'s No. 1 Inman, underreaming, 2335 feet; Don Lee Oil & Gas Co.'s No. 1 Gurner, shut down, 95 feet; Buck Creek Oil Co.'s No. 1 Smith: cementing cellar, 395 feet; and Riverside Oil Co.'s No. 1 Bogard, location.

Hall County—Coble Pet. Co.'s No. 1 Hallowfield, spudding; and Home People Oil Co.'s No. 1 Barnett, cementing 12½-inch casing to shut off salt water, 955 feet.

Hartley County—Bivins-Dawson et al.'s No. 1 Dawson, derrick.

Lipscomb County—Hamilton Oil Co.'s No. 1 Gray, shut down, 695 feet.

Stonewall County—Republic Oil & Gas Co.'s No. 1 White, shut down, 475 feet; Rosenfield et al.'s No. 1 Deudensing, repairs, 780 feet.

Moore County—Master Oil Co.'s No. 1 Masterson, location.

Baylor County—Dunn et al.'s No. 1 Webb, shut down for rig builders; Harry Van Ness et al.'s No. 1 Snyder, cleaning out, 1670 feet; Wilcox et al.'s No. 1 Robertson, drilling, 900 feet; Kansas Gulf Prod. & Ref. Co.'s No. 1 Stevens, setting casing, 670 feet; Kelly-Green's No. 1 Portwood, drilling, 600 feet; Bristow Ref. Co.'s No. 1 Porter, rig; and Woods et al.'s No. 1 Harrison, rig.

Carson County—Capitol Pet. Co.'s No. 1 Bivins, shut down, 95 feet; Gulf Prod. Co.'s No. 1 Burkburnett, spudding.

Deaf Smith County—Hereford Oil Co.'s No. 1 Neidergall, drilling, 235 feet; Knox Oil Co.'s No. 1 Laudergrin, tools on ground.

Hutchinson County—Okla. State Dev. Co.'s No. 1 Smith & Capers, shut down; Coble Heywood Oil Syndicate's No. 1 Coble, moving in tools.

Swisher County—Happy Oil Co.'s No. 1 Whitman, shut down, 635 feet.

Hemphill County—Allen & Paylor Oil Co.'s No. 1 Shaller, derrick.

Roberts County—Tolle Home Oil & Gas Co.'s No. 1 Lockhart, location.

Jack County—Great Plains Oil Co.'s No. 1 Green, shut down, 2015 feet; S. D. Felt's No. 1 Younger, shut down, 795 feet; Hudson & Jackson's No. 1 Lindsay, shut down, 1970 feet; D. McKinzie's No. 1 Knox Ranch, drilling, 1590 feet; Frontier Oil & Gas Co.'s No. 1 Lindsay, rig; Bennett Syndicate's No. 1 Knox, fishing, 270 feet; Rosner & Cosden's No. 1 Cherryholmes, shut down, 1130 feet; Roxanna Pet. Co.'s No. 1 Oliver, underreaming, 1065 feet; and Cosden Oil & Gas Co.'s No. 1 Cherryholmes, shut down, 3910 feet; and No. 1 Stewart, fishing, 2745 feet.

Knox County—Knox Oil Co.'s No. 1 McGrew, fishing, 2495 feet; De Leon Pet. Co.'s No. 1 Ward Ranch, shut down, 555 feet; Knox Leasing & Dev. Co.'s No. 1 Bates, rig.

Childress County—Plainview Oil Co.'s No. 1 Ryan, shut down, 395 feet; Duluth-Childress Oil Co.'s No. 1 Clutch, shut down, 1180 feet; Glenbrook Oil & Gas Co.'s No. 1 Smith, location; Victor Oil Co.'s No. 1 Carter, tools; Panhandle Prod. Co.'s No. 1 Robertson, cleaning out, 2210 feet; J. B. Watson et al.'s No. 1 Fields, location; and Bell et al.'s No. 1 Harvey, tools.

Wilbarger County—Home Oil Co.'s No. 1 Smith, derrick; McCormick et al.'s No. 1 Smith, fishing, 827 feet; Home Oil & Ref. Co.'s No. 1 G. Waggoner, roads impassable; Home Oil & Ref. Co.'s No. 1 P. Waggoner, roads impassable; Home Oil & Ref. Co.'s No. 2 P. Waggoner, derrick; Aetna Oil Co.'s No. 1 Goss, shut down, rain, 865 feet; Apex Oil Co.'s No. 1 Ferguson, derrick down, 1385 feet; American Eagle Oil Co.'s No. 1 Kelly, shut down, 195 feet; Guyer Trisler Oil Co.'s No. 1 Guyer, drilling, 1500 feet; Neal Hamilton Oil Co.'s No. 1 Neal, shut down, 195 feet; Beaver Farm Oil Co.'s No. 1 Womack, shut down, rain, 735 feet; Cook et al.'s No. 1 Webb, rigging up; Waggoner Colony Oil Co.'s No. 1 Taylor, fishing, 1235 feet; La Rue Oil Co.'s No. 2 Rogers, drilling, 860 feet; Vernon Oil Co.'s No. 1 Lowe, shut down, 70 feet; Robinson Harrison Oil Co.'s No. 1 McCaleb, shut down, 1190 feet; Royal Flush Oil Co.'s No. 1 Randall, location; Kansas City Oil Co.'s No. 1 King, derrick; Vessy Odell Oil Co.'s No. 1 Vassey, derrick; Hicks et al.'s No. 1 Vaughn, location; Byers Farm Oil Co.'s No. 1 Byers, shut down, rain, 975 feet; Staley-Green Oil Co.'s No. 1 Ayers, location; Harrold-Texas Oil Co.'s No. 1 Cochran, tools on ground; Webb-Mangness Oil Co.'s No. 1 Webb, spudding; Crescent Oil Co.'s No. 1 Starr, derrick; Tex.-Wyoming Oil Co.'s No. 1 Williams, location; West Vernon Oil Co.'s No. 1 Hert, shut down, 547 feet; Pope Oil Co.'s No. 1 Reasner, shut down, 1635 feet; P. P. Langford's No. 1 Cobb, shut down, 1735 feet; Liberty Oil Co.'s No. 1 Smith, shut down, 1200 feet; Staley Oil Co.'s No. 1 Vaughn, timbers; Big Waggoner Oil Co.'s No. 1 K. Waggoner, location; and Noble Oil Co.'s No. 1 Thompson, derrick.

Haskell County—Home Oil Co.'s No. 1 Cole, caving, 855 feet; Wyoming Shale & Dev. Co.'s No. 1 Colbert, litigation, 385 feet; Wright Prod. & Ref. Co.'s No. 1 Scott, temporarily abandoned account litigation; Kouri & Johnson's No. 1 Gooch, shut down, 1095 feet; S. S. Kouri's No. 1 Ballard Ranch, setting casing, 2500 feet; and Texas Central Oil Co.'s No. 1 Guinn, derrick.

Throckmorton County—Sinclair's No. 1 Wilkerson, shut down, 2445 feet; Kelly-Green's No. 1 John Davis, underreaming, 1825 feet; Prairie Oil & Gas Co.'s No. 1 Woods, drilling, 800 feet; Sun Co.'s No. 1 Reynolds, drilling, 4350 feet; and Rogers Interests' No. 1 McKnight, rig.

Petrolia County—General Oil Co.'s No. 1 Keith, shut down, 1620 feet; Ashland Oil Co.'s No. 1 T. W. Johnson, derrick; Burk Pet. Syndicate's Nos. 1, 2, 3 and 4 Kempner, shut down; Koughan & Hurst Oil Co.'s No. 1 Stine, shut down, 1685 feet; 389 Oil Co.'s No. 1 Elliott, derrick.

Foard County—Emerald Oil Co.'s No. 1 Johnson, shut down, 2795 feet; Wilbarger-Foard Oil Co.'s No. 1 Beasley, shut down, 820 feet.

Hardeman County—Hale Pet. Co.'s No. 1 Wheat, cleaning out, 2200 feet; Oklahoma Star Gas Co.'s No. 1 Neill, making repairs, 2965 feet; Nee-No-Shee Oil Co.'s No. 1 Steward, shut down, 755 feet; Midwest Oil Co.'s No. 1 Cilliam, setting 10-inch, 625 feet; Quanah Texas Prod. Co.'s No. 1 L. Ward, spudding; Daniels et al.'s No. 1 Durham, drilling, 195 feet; Frazell Oil Co.'s No. 1 A. J. Norton, shut down, and 1 Porterfield, drilling 610 feet; Wilbarger Co. Oil Co.'s No. 1 Carter, tools; McReynolds Oil & Gas Co.'s No. 1 O'Hare, spudding.

Holliday and Archer County—Humble Oil & Ref. Co.'s No. 1 Parkee, drilling, 1095 feet; King et al.'s No. 1 Mullineaux, boiler trouble, 1675 feet; Silk, Langford & Smith's No. 1 Scott, drilling, 3175 feet; Wilhelm et al.'s No. 1 Mangold, shut down, 345 feet; Fore & Heydrick's No. 1 Fore, rig down; Texas Oil Corp.'s No. 1 Williams, spudding; Perkins et al.'s No. 1 Andrews, spudded; Sparks et al.'s No. 1 Cowan, shut down, 145 feet; and Holliday S. E. Oil Co.'s No. 1 Nesbit, shut down, 705 feet; James Dowe et al.'s No. 1 Haley, shut down, 175 feet; Von Hageman's No. 1 Edwards, fishing, 870 feet; 1 Gregory, spudding; Ashton Oil Co.'s No. 1 Herron, shut down, 708 feet; McClendon Oil Co.'s No. 1 Skyles, shut down, 525 ft.; Sinclair's No. 1 DeMoss, underreaming, 1645 feet; Tri-City Oil & Gas Co.'s No. 1 Gore, shut down 470 feet; Union Oil & Prod. Co.'s No. 1 Huff, shut down, 525 feet; Burk Archer Oil & Ref. Co.'s No. 1 Andrews, spudded; Mankins Oil & Dev. Co.'s No. 1 Mankins, shut down, 395 feet.

Young County—Snowden Bros. No. 1 Addie Graham, drilling, 690 feet; Merrill Oil & Gas Co.'s No. 1 Hunt, drilling, 895 feet; Roxana Pet. Co.'s No. 1 Donnell, drilling, 1850 feet; Manhattan Oil Co.'s No. 1 Johnson, drilling, by pipe, 1985 feet; Moore et al.'s No. 1 Keene, shut down, 955 feet; National American Ref. Co.'s No. 1 Donnell, repairs; Cosden Oil & Gas Co.'s No. 1 Timmons, casing trouble, 2985 feet; Mattie Gervin Oil Co.'s No. 1 Stein Land, shut down, 1475 feet; Humble Oil & Ref. Co.'s No.

1 Marshall, casing pulled, 1285 feet; Staley Langford & Chenault's No. 1 Donnell, fishing at 115 feet; Arkansas Oil & Gas Co.'s No. 1 Jeffries, shut down, 145 feet; Southwestern Miami Oil & Dev. Co.'s No. 1 McKeen, rigging up; Sun Oil Co.'s No. 1 Donnell, setting casing, 2440 feet; Ajax Texas Oil Corp.'s No. 1 Benson, rigging up; Texas Company's No. 1 Graham, swabbing, 3975 feet; 1 Arnold, drilling and cleaning out, 4690 feet; 1 Blair, drilling, 2630 feet; 1 Norris, cleaning out, 1845 feet;

Byers Section—Byers Pet. Co.'s No. 1 Byers, derrick; Southwestern Natl. Pet. Co.'s No. 1 Ligon, junked.

Charlie Section—Gamble & Price's No. 1 Hansard, shut down, 899 feet; Thornberry Oil Co.'s No. 1 Godley, shut down, 1635 feet; Big Wichita Oil & Gas Co.'s No. 1 Prey, drilling, 700 feet; Damon Oil Co.'s No. 1 Dean, shut down, 1395 feet; Edrington Oil Co.'s No. 1 Edrington, rigged up.

Friberg—Madeline Rose Oil Co.'s No. 1 Lewis, shut down, 395 feet; Burk Petrolia Oil Co.'s No. 1 Lomax, rig down; Jetter Oil Co.'s No. 1 Cooper, setting casing, 450 feet.

Other Wichita County Wells—East Wichita Oil Co.'s 1 Honaker, fishing, 1460 feet; Grisdale & Erickson's No. 1 Fore, shut down account high water, 2170 feet; Sun Co.'s No. 1 Ed. Waggoner, fishing, 1165 feet; Thrift (No. 5) Oil Co.'s No. 1 J. Moore, drilling, 1270 feet; Black Burnett Oil Co.'s No. 1 Roller, drilling, 720 feet; Bay City Oil Co.'s No. 1 Roller, drilling, 800 feet; National Oil Project Co.'s No. 1 Nicehlser, drilling; and Unit Oil Co.'s No. 1 Reilly, drilling, 850 feet.

Coastal Wildcats

Fort Bend County—The Island Lake Oil Co.'s No. 3 on the Tarkington tract, near Rosenberg, is down around 3100 feet; the Circle Oil Co.'s No. 1 Myers, near Blue Ridge, is down around 2980 feet; the Southland Oil & Refining Co.'s test, near Fulshear, is a derrick; R. E. Brooks Jr.'s No. 1 Sanders, near Orchard, is drilling around 700 feet.

Victoria County—The Victoria Oil & Gas Co.'s No. 1 Klein on the Victoria Townsite, is down around 2780 feet.

Brazos County—The Big Ben Oil Co.'s test near the town of Navasota is shut down around 1700 feet.

Grimes County—The Texas Oil, Gas and Mineral Products Co.'s No. 1 Lamb Springs, near Piedmont, is shut down around 2600 feet; the Crown Petroleum Co.'s No. 3 Crawford, near Singleton, is testing around 720 feet.

Hardin County—The Civil Oil & Gas Co.'s No. 1 Fee on the Calderon Survey, near Batson, is a derrick.

Montgomery County—The Conroe Oil Co.'s No. 1 Henry-Yeargsen, west of Conroe, is a derrick; the Black Hawk Petroleum Co.'s No. 4 Walker, near Singleton, is drilling around 500 feet.

Wharton County—The West Side Oil Company of El Campo is preparing to drill west of El Campo, where it has 16,000 acres under lease.

Travis County—W. W. Robertson et al.'s No. 1 test, one mile east of Waters Park, is down around 1025 feet.

Harris County—The Texas Co.'s No. 2 Beiler, near Addicks, is drilling around 1000 feet.

The Success Oil Co.'s No. 1 Fee on the Washington County Survey, near Fairbanks, is rigging up.

The Gulf Production Co.'s No. 8 Warren, at Hockley, is drilling around 525 feet.

The Texas Exploration Co.'s No. 1 Warren at Hockley is rigging up.

The Kelly Oil and Gas Co.'s No. 3 Drobish at Cross Timbers is drilling around 1400 feet.

The Commonwealth Oil Co.'s No. 1 Settegast, at Pierce Junction, is drilling around 2400 feet (corrected depth).

W. H. Drummett et al.'s No. 3 Settegast, at Pierce Junction, is standing around 1400 feet.

The Texas Exploration Co.'s No. 3 Taylor, at Pierce Junction, is drilling around 800 feet; No. 2 Settegast is drilling around 1250 feet.

The Humble and Gulf Coast Oil Co.'s No. 1 Edmundson, near Alameda, is down around 3000 feet.

The Texas Oil Producers No. 1 Garden No. 2, on oil mound near South Houston, is drilling around 2600 feet.

Galveston County—The Sun Co.'s No. 1 Cade on High Island has the drill stem stuck around 3000 feet.

The Friendswood Oil and Gas Co.'s No. 1 Allen, near Friendswood, is down around 1525 feet.

Jefferson County—The Texas Co.'s No. 2 Fitzhugh, near Big Hill, is drilling around 2670 feet.

Orange County—The Shipbuilders Oil Co.'s No. 3 Chessom is a location; No. 2 Mary Williams is a location, and No. 1 Bland is down around 3100 feet.

The Little Six Oil Co.'s No. 1 Ho. & R. Co. is standing around 1340 feet.

The Cadman Oil Co.'s No. 1 Fletcher and Carroll is standing around 2770 feet.

The Brown Oil Co.'s No. 1 Luce is a derrick.

Walker County—The Humble Oil and Refining Co.'s No. 1 Eastham, near Huntsville, is drilling around 1765 feet.

Liberty County—The Houston Oil and Refining Co.'s No. 1 Schlender, northwest of Dayton, blew out last week while taking cores of the formation around 1980 feet. It blew mud and sand nearly to the top of the derrick. When the blowout occurred they were taking cores of the formation and the core barrel was approximately 600 feet off of bottom. Samples of the sand brought to Houston show indications of oil, but as yet have not been tested. It is now going over the four, with six-inch to loosen the drill stem, which was stuck when the blowout occurred.

E. S. Hamilton's No. 2 Monroe, south of Liberty, has not as yet completed rigging up. Bad weather has caused considerable delay.

The Empire Gas and Fuel Co.'s No. 2 Jackson, south of Dayton, is drilling around 1300 feet; No. 3 Welder is drilling around 2000 feet, and No. 1 Wilson is fishing around 2980 feet.

E. F. Simms & Co.'s No. 1 Pruitt, northwest of Dayton, is rigging up.

The Humble Oil and Refining Co.'s No. 12 McCardle at Davis Hill, is drilling around 1925 feet; No. 1 Hume is drilling around 2040 feet.

The Chance to Lose Oil Co.'s No. 1 Ferguson, in the Walley District, is rigging up.

Brazoria County—The Castell Oil Company and the Crown Oil and Refining Co.'s No. 1 Storrie at Stratton Ridge blew out last Sunday around 748 feet, and blew for an hour and forty minutes. The six-inch was shot up to the top of the derrick. Drilling was resumed the latter part of the week.

The Humble Oil and Refining Co.'s No. 1 Brock at Stratton Ridge, is a derrick; No. 6 Seaburn is drilling around 2350 feet.

The Texas Co.'s No. 1 Cochran and McClure at Stratton Ridge is a derrick.

The Freeport Sulphur Co.'s No. 3 Tolar and Dannenbaum at Stratton Ridge is drilling around 1140 feet.

The Texas Co.'s No. 2 Allen, on the Allen ranch in the southern portion of the county, is rigged up, waiting orders.

The Pilot Oil and Refining Co.'s test on the Mitchell survey, south of East Columbia, is standing.

The Alberta Oil Association's No. 1 Quiggs, near Alvin, has set six-inch at 1670 feet.

The Grant Oil Syndicate of Pittsburgh's No. 2 Newby, at Alvin, is drilling around 1880 feet.

Jackson County—The Vanderbilt Petroleum Co.'s No. 1 Koop, near the town of Vanderbilt, is rigged up, waiting on roads to dry to haul fuel oil.

The Coast Line Oil Co.'s No. 1 Calhoun, near Edna, is rigged up, waiting on orders.

Matagorda County—The Rio Bravo Oil Co.'s No. 1 Hawkins, on the Hawkins survey, near Bay City, has been abandoned around 1800 feet. The same company is rigging up to deepen its No. 1 Fry on Shepherds Mott, near Bay City, which was temporarily abandoned around 2000 feet several months ago.

The Allen-Texas Oil Co.'s No. 1 Bear has the derrick down. The hole is down around 2800 feet.

Sheldon District—The Schumacher Oil Co.'s No. 3 Hautier-Hare, is taking cores of the formation around 2345 feet.

J. S. Daugherty et al.'s No. 1 Hautier-Exploration is drilling around 2480 feet.

The Crown Oil & Refining Co. and the Gulf Coast Oil Corporation's No. 1 Hautier-Rice Company is drilling around 600 feet.

G. W. Pendergrass et al.'s No. 1 Richardson is drilling around 2600 feet.

The Crosby Petroleum Co.'s No. 1 Fleming is drilling around 2610 feet.

R. M. Aitken et al.'s test, northeast of Greens Bayou, is rigging up.

North Louisiana Wildcats

Webster Parish—Banks Oil Co., Lee 1, sec. 25-22-9, side tracking at 1400 feet; Minden Pet. Co., Ferguson 1, sec. 28-19-8, set 4-inch casing at 2004 feet; Pine Valley Oil Co., Porter Wadley Lmbr. Co. 1, sec. 7-22-10, drilling 1650 feet; J. Y. Steele, White 1, sec. 22-20-9, derrick; E. B. Selden, Taylor 1, sec. 30-22-10, location; Shallcross & Giles, Kelly 1, sec. 26-23-11, derrick; La-Miss Oil Co., Denman 1, sec. 1-22-11, location; and Norris & Derryberry, Davis 1, sec. 17-20-10, location.

Bienville Parish—Walter Dickinson et al. Fuller 1, sec. 6-16-7, drilling 500 feet; Early Oil Co., Calhoun 1, sec. 22-18-7, drilling at 900 feet; Louisiana Oil & Ref. Corp., Manning 1, sec. 22-15-10, drilling at 1450 feet; J. E. & J. M. Lummis, McGuire 1, sec. 19-18-5, drilling at 1150 feet; Ringgold Oil & Gas Co., Mosley 1, sec. 5-15-9, drilling out cement plug; and F. E. Rose, Woodard 1, sec. 12-18-8, drilling at 1700 feet.

Bossier Parish—Weidrox Oil Co., Antrium 1, sec. 19-22-13, drilling at 1000 feet; R. O. Roy, Jamieson 1, sec. 14-19-12, derrick; Savoy Oil Co., Knight 2, sec. 25-16-12, set 10-inch at 275 feet; Atlas Oil Co., Weaver 2, sec. 26-16-12, killing blowout at 1700 feet; Atlas Oil Co., Caplis 2, sec. 23-16-12, killed blowout at 1920 feet, drilling deeper.

Union Parish—Mayfair Oil Co., James 1, sec. 19-22-3, drilling 2350 feet.

Lincoln Parish—Amber Oil Co., Newblock 2, sec. 22-18-2, drilling at 3300 feet; Tulsa Prod. Co., Fuller 1, sec. 24-20-3, drilling at 200 feet; Gladys-Bell Oil Co., Colvin 1, sec. 22-21-2, drilling at 1100 feet.

Ouachita Parish—Texas Co., Philips 2, sec. 4-19-4, reaming to set casing at 2000 feet; and United Oil & Gas Prod. Co., Guthrie 1, sec. 49-20-4, set 10-inch at 190 feet.

Natchitoches Parish—La.-Pet. Prod. Co., Trekell 1, sec. 29-11-10, drilling at 50 feet; and Planters Oil & Min. Co., Ayers 1, sec. 3-13-7, rigging up to drill.

Northeast Texas Wildcats

Marion County—Bayou Lands Oil Co., Marshall 1, drilling 2380 feet.

Panola County—Texas Co., Waterman Lmbr. Co. 7, drilling 2580 feet.

Shelby County—Texas Co., Pickering Lmbr. Co. 8, drilling 2500 feet.

Shelby County—Texas Co., Pickering Lmbr. Co. 10, drilling 700 feet.

Red River County—Avery Pet. Co., Bearden 1, re-setting 6-inch casing.

Lamar County—Tri-Sands Oil & Dev. Co., Ford 1, rigging up to drill.

Central West Texas Wildcats

Brown County—Rucker Oil Co.'s No. 1 Grantham, shut down, changing hands; Midway Oil Co.'s No. 1 Blair, shut down for casing, 110 feet; Pennant Oil & Gas Co.'s No. 1 Harris, small show, drilling 3010 feet; Martin Oil Co.'s No. 1 Stone, material on the ground; Nelson Bros. No. 1 Cox, shut down for order, 2552 feet; Miller et al.'s No. 1 Stearns, setting casing, 1520 feet; Bailey et al.'s No. 1 Looper, fishing, 2477 feet; Tex-Penn Oil Co.'s No. 1 Wheeler, drilling, 250 feet; Crown Oil & Gas Co.'s No. 1 Childress, drilling, 1530 feet; No. 1 McIntire, shut down, 1230 feet; Johnnelly et al.'s No. 2 Greeley, rig; Texas Company's No. 2 Baught, building rig; Lamb et al.'s No. 1 Richardson, drilling, 1180 feet; Williamson & Williamson's No. 1 Cox, shut down, 10 feet; Texas Eastern Oil Co.'s No. 1 Cleveland, rig up ready to spud; Bailey et al.'s No. 1 Love, drilling, 1228 feet; Liberty Oil & Gas Co.'s No. 1 Ford, drilling, 1870 feet.

Callahan County—Ranger Andrews Oil Co.'s No. 1 Odom, drilling, 1565 feet; Alamo Petroleum Co.'s No. 1 Hart, shut down for tools; L. P. Litzinger's No. 1 Albin, fighting cave, 1720 feet; Roxana Petroleum Co.'s No. 1 Hart, underreaming, 1850 feet; New Southland Oil Co.'s No. 1 Vestol, shut down, 2750 feet; Pierce Oil Corp.'s No. 1 McGowan, caving trouble, 1650 feet; E. H. R. Green's No. 1 Scott, underreaming, 3050 feet; Allen and Urbin's No. 1 Tabor, underreaming, 1245 feet; Humble Oil & Refining Co.'s No. 1 Isenhouse, fishing, 1251 feet; R. O. Harvey's No. 1 Crosbie, shut down, 1420 feet; A. F. Morris' No. 1 Peek, 5-barrel pumper, 1746 feet; Roxana Pet. Co. et al.'s No. 1 Pippin, shut down, 1450 feet; Vander Weider's No. 1 Harris, drilling, 175 feet; Ohio Cities Oil & Gas Co.'s No. 1 Grant, shut down, 678 feet; Clyde Callahan Oil Co.'s No. 1 Wood, shut down, 240 feet; Texas Midland Pet. Co.'s No. 1 Powell, laying water line; Tex-Penn Oil Co.'s No. 1 Woods, rig; Byron Union Oil Co.'s No. 1 Hennessey, rig.

Coke County—R. E. Lee Oil Co.'s No. 1 Stroud, shut down, 3300 feet; Shumacker Oil Co.'s No. 1 Westbrook, shut down, 2690 feet; Allen & Shaffer's No. 1 Arlege, drilling, 850 feet; Thomas & Ludlow's No. 1 Sauls, some material on ground; Texas Pet. Co.'s No. 1 Gletcher, rig; Allen & Boren's No. 1 Campbell, rig; West Texas Production Co.'s No. 1 Wilkins, shut down for casing; Texas Pet. Co.'s No. 1 Harris Bros., shut down for fuel, 1708 feet.

Coleman County—Mitchell & Sons' No. 3 Gray, temporarily abandoned; 740 feet; System Oil Co.'s No. 1 Miller, shut down, 3165 feet; Valera Oil Co.'s No. 1 Overall, fishing for bit, 1192 feet; Prairie Oil & Gas Co.'s No. 1 Miller, has resumed drilling, 1350 feet; Seaman Oil Co.'s No. 1 Parker, rig; Texas Prod. Dept.'s No. 1 Love, shut down for crew, 1450 feet; Magnolia Petroleum Co.'s No. 1 Woodward, preparing to skid rig, 1066 feet; Arizona Oil Co.'s No. 1 Adams, small show, shut down, 1776 feet; Magnolia Petroleum Co.'s No. 8 Morris, fishing, 600 feet; Gladys Belle Oil Co.'s No. 2 Fuller, 20 barrels after shot, 1565 feet; Pippin Oil Co.'s No. 1 Burk, shut down, 987 feet; Texas Company's No. 1 Rice, shut down, 1280 feet; Teatsort & Dodswell's No. 1 Candet, fishing, 1810 feet; Santa Anna Oil & Gas Co.'s No. 1 Kingsbury, shut down, 1228 feet; Stewart et al.'s No. 1 Lucas, drilling, 300 feet; Naomi Oil Co.'s No. 1 Vaughn, shut down, 210 feet; Magnolia Elizabeth Oil Co.'s No. 9 Morris, rig; Mitchell & Sons' No. 6 Gray, fishing, 1280 feet; Mitchell & Sons' No. 1 Morris, fishing.

Concho County—Shultz Oil Co.'s No. 2 Shultz, drilling, 3160 feet; Leonard Petroleum Co.'s No. 1 Warring, show of oil, shut down, 2910 feet; Texas Meers Oil Co.'s No. 1 Hartgrove, moving in tools.

Fisher County—Mineola Oil Co.'s No. 1 Lannier, rigging up; H. H. Wilcox's No. 1 Barron, shut down, 315 feet; No. 1 Hodges, straightening hole, 75 feet; F. G. Gillock's No. 1 McWhirter, rig; Moss & Foster's No. 1 Lewis; timbers; Scott & Braden's No. 1 Harris, rig; Sebring et al.'s No. 1 Wallingham, rig; Wester Southern Oil Co.'s No. 1 McCall, rig; Ashton et al.'s No. 1 Robertson, rig; Lincoln Oil Co.'s No. 1 Crowley, rig.

Hamilton County—Hamilton et al.'s No. 1 Burmal, fishing, 3555 feet; Gladys Belle Oil Co.'s No. 1 Gholson, drilling, 1680 feet; O. F. Dickerson's No. 1 Anderson, shut down; Harrington & Robertson's No. 1 Node, drilling, 1500 feet; Laughter Bros. No. 1 Schronk, tools moved in; No. 1 Streeter, drilling, 2350 feet.

Irion County—Spellman Oil Co.'s No. 1 Tankersley, shut down, 722 feet.

Jones County—Liberty Bell Oil Co.'s No. 1 Culbertson, rig; Security Banking & Inv. Co.'s No. 1 Sears, shut down, 2650 feet; Kramer & Codmans' No. 1 Harrell, shut down, 1635 feet.

Lampasas County—Harwell et al.'s No. 1 White, shut down, 1031 feet; Texoleum Pet. Co.'s No. 1 Hill, shut down; Defee et al.'s No. 1 LaCompt, engine trouble, 905 feet; Melma Marvin Oil Co.'s No. 1 McCrea, shut down, 1195 feet; Key & Harris' No. 1 Baxter, shut down for crew, 350 feet; Lometa Oil Co.'s No. 1 Brown, shut down, 350 feet; Price et al.'s No. 1 Grove, drilling, 1000 feet; Carter et al.'s No. 1 Neil, tools ordered; Western Lampasas Oil & Gas Co.'s No. 1 Whittenberg, drilling, 350 feet.

McCulloch County—Texas Oil & Ref. Co.'s No. 1 Dutton, has resumed drilling, 750 feet; S. O. Thomas' No. 1 White, cleaning out cave, 2897 feet; Liberty Oil & Gas Co.'s No. 1 Shelton, shut down, 660 feet; Thomas et al.'s No. 1 Craig, drilling, 2600 feet; Douglas Oil Co.'s No. 1 Crothers, shut down for orders, 2280 feet; Slaughter et al.'s No. 1 Hinton, preparing to skid rig; R. W. Morris' No. 1 Richard, shut down, 450 feet; Cunningham & Devine's No. 1 W. M. & G. White, location; No. 1 W. M. White, location.

Mills County—Fidelity Oil Co.'s No. 1 Young, making new contract, 2042 feet; Columbia Oil & Gas Co.'s No. 1 Cryer, shut down, 825 feet; Central Texas Dual Co.'s No. 1 Hupstutter, shut down, 275 feet; Venture Oil Co.'s No. 1 Curtis, shut down, 3259 feet; Texas Prod. Co.'s No. 1 Locklear, repairing machinery, 1770 feet; Haywood Oil Syn.'s No. 1 Ward, underreamed to 1650 feet; Bisbe Texas Oil Co.'s No. 1 Weatherby, drilling, 175 feet.

Mitchell County—Evans et al.'s No. 1 Foster, rig.

Nolan County—Blackwell Oil Co.'s No. 1 Jordan, shut down, 750 feet; Otera Oil Co.'s No. 1 Booth, changing tools, 450 feet; Packard Oil & Gas Co.'s No. 1 Booth, drilling, 2500 feet; Nolan Oil & Gas Co.'s No. 1 Montgomery, drilling, 2800 feet; Wichita Nolan Oil & Gas Co.'s No. 1 Kutman, drilling, 935 feet; Shallenberger et al.'s No. 1 Harris, ready to spud.

Runnels County—Runnels County Oil Co.'s No. 1 Pfluger, will skid rig, 1506 feet; Sinclair Gulf Oil Co.'s No. 1 McNay, drilling, 1000 feet; Commonwealth Oil Co.'s No. 1 Johnson, rig; Winters Oil & Gas Co.'s No. 1 Seale, shut down, 1770 feet; Winters Oil & Gas Co.'s No. 1 Hightower, shut down, 2706 feet; Nelson & Nelson's No. 1 Spreen, shut down, 600 feet; Safety First Oil Co.'s No. 1 Allen, shut down, 655 feet; Bapst & Wilson's No. 1 Karnegay, setting casing, 125 feet; Lavy et al.'s No. 1 Russell, shut down, 1010 feet; Western Petroleum Co.'s No. 1 Richardson, shut down after spudding.

San Saba County—Martin Oil Co.'s No. 1 Gray, shut down, 450 feet; Royal Duke Oil Co.'s No. 1 Heatherly, fishing, 850 feet.

Sterling County—McCraley Oil Co.'s No. 1 Douthit, shut down, 520 feet; Allied American Oil & Ref. Co.'s No. 1 Foster, location.

Scurry County—Oklahoma Snyder Oil Co.'s No. 1 Snyder, shut down, 836 feet; Snyder Oil Co.'s No. 1 Walker, rig; Stanton Oil Co.'s No. 1 Riley, drilling, 250 feet.

Shackleford County—Empire Gas & Fuel Co.'s No. 1 Reynolds, repairing rig, 3300 feet; Texas Cushing Oil Co.'s No. 1 Proctor, shut down, 3300 feet; Benedum & Trees' No. 1 Nail, drilling, 3200 feet; Texas Co.'s No. 1 Webb, drilling, 2025 feet; Texas Oil & Dev. Co.'s No. 1 Driggers, shut down, 800 feet; Texas Cushing Oil Co.'s No. 1 Colbert, shut down, 1350 feet; Murphy & Bolanz's No. 1 Conrad, setting casing, 1185 feet; Virginia Ref. Co.'s No. 1 Pettus, rig; Texahoma Oil Co.'s No. 1 Black, shut down, 1518 feet; Baird Petroleum Co.'s No. 1 Dyer, drilling, 1405 feet; Hogan et al.'s No. 1 Poindexter, fishing, 2305 feet; Associated Oil Co.'s No. 1 Snyder, drilling, 1405 feet; Central Oil Co.'s No. 1 Fite, drilling, 175 feet; Tidal Oil Co.'s No. 1 Hill, location; No. 1 King, location.

Taylor County—Erath et al.'s No. 1 Bilberry, shut down, 350 feet; Kepley & Bright's No. 1 Harrison, shut down for orders, 2500 feet; Gillispie et al.'s No. 1 Clark, drilling, 2055 feet; Allison & York's No. 1 Denman, location; No. 1 Hamilton, drilling, 1625 feet; No. 1 Hale, shut down, 1190 feet; Galbraith et al.'s No. 1 Parker, drilling, 645 feet; Security Banking & Inv. Co.'s No. 1 Bland, shut down, 2180 feet; Saber et al.'s No. 1 Joyce, rig; Burford & Brinn's No. 1 Butman, rigging up.

Tom Green County—San Diego Oil Co.'s No. 1 Clegg, drilling, 1765 feet; San Angelo Oil Co.'s No. 1 Harris, shut down, 2460 feet; Whitesides et al.'s No. 1 Doorkey, drilling up underreamer lugs, 2930 feet.

Erath County—Burt & Griffith's No. 1 Roberts, fishing, 3840 feet; No. 1 Laney, temporarily abandoned; Western Dev. Co.'s No. 1 Stroud, abandoned; Columbia Oil & Gas Co.'s No. 1 Connally, shut down for repairs; Sinclair Gulf Oil Co.'s No. 1 Stacy, shut down, 2250 feet; Texas & Pacific Coal & Oil Co.'s No. 2 Long, drilling, 2000 feet; Big Jack Oil Co.'s No. 1 Jarvis, shut down for new sand line; Gulf Production Co.'s No. 1 Thompson, fishing, 4100 feet; Franklin Oil Co.'s No. 1 Jarvis, shut down for casing; Erath County Oil Syn.'s No. 1 Gordon, shut down for new contract; McLester et al.'s No. 1 Keith, shut down; Sinclair Gulf Oil Co.'s No. 1 Pearcy, shut down for boiler repairs; Duke Leon Oil Co.'s No. 1 Moore, fishing, 3410 feet; Yancy's No. 1 North, drilling, 4035 feet; Phoenix Pet. Co.'s No. 1 Martin, cleaning after shot, showing 10 barrels; Sinclair Gulf Oil Co.'s No. 1 Thornton, 20 M ft. of gas at 2710 feet; Dixie Oil Co.'s No. 2 Hamilton, setting casing, 2636 feet; Petroleum Prod. Co.'s No. 1 Robbins, drilling, 2450 feet; Texas & Pacific Coal & Oil Co.'s No. 1 Garner, rig; Moore et al.'s No. 2 Moore, 500 barrels at 2730 feet; Magnolia Pet. Co.'s No. 2 Reynolds, location; Dixie Oil Co.'s No. 4 Hamilton, drilling, 175 feet; Comanche Northern Oil Co.'s No. 2 Carruth, drilling, 1880 feet; No. 3 Carruth, drilling, 650 feet.

Palo Pinto County—Edrington et al.'s No. 1 Dalton, shut down 1610 feet; Texas Co.'s No. 1 McDonald, drilling 4340 feet; Burkett et al.'s No. 1 Wilson, abandoned; Whitesides et al.'s No. 1 Candill, rig; Warner et al.'s No. 1 Pennington, shut down 4195 feet; Whitesides et al.'s No. 1 Layne, shut down for crew 3217 feet; Sinclair Oil Co.'s No. 1 Abrams, fishing 4215 feet; No. 2 Holt, shut down for repairs, 4250 feet; Hoffman Oil Co.'s No. 1 Costello, shut down 1665 feet; Owen & Wilson's No. 2 Lynch, shut down after spudding; Empire Gas & Fuel Co.'s No. 1 Edmonson, drilling 4425 feet; Prairie Oil & Gas Co.'s No. 1 Edmonson, drilling 3870 feet; Upham et al.'s No. 1 Belding, cleaning out 4236 feet; Mid-West Oil Co.'s No. 1 Robinson, fishing 4002 feet; Empire Gas & Fuel Co.'s No. 1 Wheeler, shut down; Consumers Oil & Gas Co.'s No. 1 Corn, shut down 1530 feet; No. 2 Oaks, rig; No. 1 Hess, abandoned; Texas & Pacific Coal & Oil Co.'s No. 12 Stewart, 600 barrels at 1700 feet; Palo Pinto Petroleum Co.'s No. 1 White, rig; Lone Star Gas Co.'s No. 3 Oaks, temporarily abandoned, 1140 feet; Texas & Pacific Coal & Oil Co.'s No. 13 Stewart, 20 million ft. of gas; No. 1 Ringold, ½ million feet of gas at 3470 feet; No. 1 Bradley, rig; No. 1 Foreman, drilling 3420 feet;

No. 1 Bratton, drilling, 3360 feet; Magnolia Petroleum Co.'s No. 1 Tissman, fishing for bit, 415 feet; Lone Star Gas Co.'s No. 1 Herrington, abandoned; No. 2 Herrington is an abandoned location; No. 3 Herrington is an abandoned location; No. 4 Herrington, abandoned location; Silver Rock Oil Co.'s No. 1 Bosley, rig; Prairie Oil & Gas Co.'s No. 1 Stewart, shut down for fuel, 1200 feet; Texas & Pacific Coal and Oil Co.'s No. 1 Booles is a new rig on old hole, 2800 feet; Consumers Gas & Fuel Co.'s No. 4 Oaks, rig; Jagger Wallace Oil Co.'s No. 1 Mallery, rig; Lone Star Gas Co.'s No. 6 Oaks, drilling, 400 feet.

Parker County.—Burt & Griffiths L. Perry is fishing for three strings of tools in the 5-inch hole, Ranger Rock Island Oil Co.'s No. 1 Davis is waiting on timber to build rig; McClelland Pet. Co.'s No. 1 Gardner is shut down for 6-inch casing and cable; Associated Oil Co.'s No. 1 Davis is a rig; Franklin Oil & Gas Co.'s No. 1 Cartwright is drilling at 800 feet; Ranger Rock Island Oil Co.'s No. 1 C. L. Davis is a rig.

Somerville County—Benedum and Trees No. 1 Rogers is abandoned; Ludlow & Thomas' No. 1 Eddy is a rig, and No. 1 Prewitt is a rig.

Borden County—Mt. Pleasant Oil Co.'s No. 1 Beaver, rig.

Lynn County—Tahoka Oil Co.'s No. 1 Cowan, fishing 2700 feet.

Garza County—Post City Dev. Co.'s No. 1 Payne, rig; Garza Oil & Dev. Co.'s No. 1 Boren, rig; Justicburg Oil Co.'s No. 1 Waldren, location.

Kent County—McFain Oil & Gas Co.'s No. 1 Brown, drilling 1300 feet.

Howard County—Big Springs Prod. Co.,'s No. 1 Quinn, drilling 900 feet; General Oil Co.'s No. 1 Reed, rig; No. 1 Johnson, rig; No. 1 Roberts, timbers.

Reeves County—Trxel et al's No. 1 Johnson, rig; Sunshine Oil Co.'s No. 1 Van Horn Bank, drilling 1620 feet.

Ward County—Sunshine Oil Co.'s No. 1 Victory, drilling 650 feet.

Glasscock County—Texas Prod. Oil Co.'s No. 1 Brunson, drilling 1500 feet; General Oil Co.'s No. 1 McDowell, drilling 750 feet; No. 1 Neal, drilling 350 feet.

Midland County—West Texas Oil Co.'s No. 1 Bryant, drilling 1025 feet.

Martin County—Midland Tulsa Oil Co.'s No. 1 Walcott, rig.

Presidio County—Texas Ajax Oil Co.'s No. 1 Mitchell, rig.

Brewster County—Hudson & Burger's No. 1 Hargus, drilling 865 feet; Manhattan Oil Co.'s No. 2 Dugout Creek, rig; No. 1 Nigger Creek, rig.

Terrell County—Southwest Texas Oil Co.'s No. 1 Folson, drilling 3210 feet; Record Oil Co.'s No. 1 Bassett, location; Central Oil Dev. Co.'s No. 1 Cannon, rig.

Crockett County—Ryan Pet. Co.'s No. 1 Henderson, shut down 550 feet; Central Oil Dev. Co.'s No. 1 Massey, rig; No. 1 Davison, rig; Moore et al's No. 1 Mauldin, derrick; Ross et al's No. 1 Friend, rig.

Pecos County—Menzie's No. 1 Sherbino, shut down 3095 feet; Reily Texas Acreage Co.'s No. 1 Noelke, fishing 3111 feet; Sward et al's No. 1 Perry, location; Circle Oil Co.'s No. 1 Harrell, drilling 560 feet; Bethlehem Texas Oil Syndicate's No. 1 Corder, location.

El Paso County—El Paso Oil Co.'s No. 1 Harrison, drilling 660 feet.

Kaufmann County—Continental Oil Co.'s No. 1 Cartwright, shut down 240 feet; Elmo Oil Co.'s No. 1 Ables, rig.

Henderson County—Blue Ledge Oil Co.'s No. 1 Pippin, shut down 2105 feet.

Johnson County—Johnson Oil Co.'s No. 1 Rhodes, shut down 2100 feet; Texas Pet. Co.'s No. 1 Laramore, rig.

Hill County—Foster & Curtis et al's No. 1 Thigpen, drilling 675 feet; Rader et al's No. 1 Martin, drilling 1025 feet.

Navarro County—State of Texas No. 1 Orphans' Home, shut down 3725 feet; Corsicana-Texas Oil Co.'s No. 1 Gray, location; Corsicana Deep Well Oil Co.'s No. 1 Springfield, fishing 1755 feet; El Dorado Oil Co.'s No. 1 Cox, fishing 1540 feet.

Limestone County—Mathews et al's No. 1 Brown, shut down 3200 feet; Good Oil Co.'s No. 1 Walker, shut down 1720 feet.

Bell County—Bell County Oil Co.'s No. 1 Holcomb, shut down 1250 feet; Dunham et al's No. 1 Haynes, location; K. B. Oil Co.'s No. 1 Swope, rig; Nolan Bell Oil Co.'s No. 1 Brown, fishing 156 feet; Mellon Oil Co.'s No. 1 Bailey, fishing 615 feet; Eclipse Oil Co.'s No. 1 Owens, rig.

Coryell County—Buckeye Mid-Texas Oil Co.'s No. 1 Strickland, drilling 1630 feet; Columbia Texas Oil Co.'s No. 1 Sadler, tools moved in; McKeysport Texas Oil Co.'s No. 1 Lilgebold, fishing 1000 feet; Dunham et al's No. 1 Pace, location;; No. 1 Gotaker, shut down 1205 feet; No. 1 Beverly, location; No. 1 Teinert, drilling 750 feet; Riggs et al's No. 1 Elms, location.

Hood County—Burford & Brinn's No. 1 Paulson, shut down 1040 feet; Cordoral Oil Co.'s No. 1 Burleson, shut down 1540 feet; Sinclair Gulf Oil Co.'s No. 1 Fallowell, rebuilding rig 4710 feet; Young's No. 1 Cogdell, underreaming 1000 feet; Texas Crude Oil Co.'s No. 1 Cogdell, straight reaming 2084 feet.

McClennan County—Waco Oil & Refining Co.'s No. 1 Harrington, shut down 2860 feet; Osenbeck's No. 1 Bezdek, shut down 1555 feet; Bosque Pet. Co.'s No. 1 Brown, timbers; Miller et al's No. 1 Miller, location; Leney Moorehouse et al's No. 1 Stewart, location.

Bosque County—Invader Oil Co.'s No. 1 Williams, drilling 2265 feet; Constantine & Egan's No. 1 Harris, rig; Orr & Miracle's No. 1 Ray, setting casing 1900 feet; J. E. Ferguson's No. 1 Herring, fishing 950 feet; Penn. Prod. Co.'s No. 1 Cunningham, shut down 20 feet; Sinclair Gulf Oil Co.'s No. 1 Grimland, drilling 3610 feet; Coleman & Wasson's No. 1 Cox, drilling 1500 feet; Thomas & Ludlow's No. 1 Prather, rig; No. 1 Jameson, rig.

South Louisiana Wildeats

Plaquemine Parish—The Gulf Development Co.'s No. 4 Hero, south of Algiers, is down around 2940 feet.

Hero & Hughes No. 1 Hero is sidetracking at 2887 feet.

Orleans Parish—The Gentilly Oil & Gas Co.'s No. 1 Gentilly is a derrick.

The Republic Oil & Sulphur Co.'s test near New Orleans is down around 2750 feet.

Terrebone Parish—The Foundation Oil Co.'s No. 3 Lirette, section 51-19-19, is standing at 2750 feet; No. 1 Verrett, section 32-19-19, is drilling around 1740 feet.

The Trinity River Oil & Gas Co.'s No. 1 Gaidry, section 98-17-17, is a derrick.

St. Martins Parish—The Acme Oil Co.'s No. 2 Fee, section 6-9-5, is drilling around 1810 feet.

Emmerson & Gulf's No. 2 Martin, section 5-9-5, was an eight barrel pumper at 1303 feet and is drilling deeper.

Hillery & Co.'s No. 1 Pourceaux, section 37-9-5, is testing at 875 feet.

I. A. Mabry & Co.'s No. 1 Afchalaya, section 9-8-1, is drilling around 625 feet.

The Penn-La. Oil Co.'s No. 1 Broussard, section 15-9-5, is rigging up.

Smith et al's No. 1 Granger, section 18-11-6, has been temporarily abandoned at 2056 feet.

Waterman & Co.'s No. 1 Castile, section 17-9-5, is rigging up.

St. Mary's Parish—E. J. Peters et al's No. 1 Avoca Island, in section 31-16-13, is drilling around 3120 feet.

Lt Fourche Parish—The Texas Co.'s No. 3 Gheens has been abandoned around 3050 feet. No. 4 Gheens is reaming at 2501 feet.

San Antonio District

Williamson County—The Round Rock Oil Co.'s No. 1 Walsh, northwest of Round Rock, is drilling around 300 feet. It will be drilled to 3500 feet unless production is sooner secured.

Caldwell County—The Texas Southern Oil & Leasing Syndicate's No. 1 Thompson is rigging up.

Starr County—The Jerome-Texas Oil Co.'s No. 1 Roma is standing around 1400 feet.

The Rio Grande Oil & Gas Co.'s No. 1 Kelsey is standing around 1320 feet.

Spurrier et al.'s No. 1 Fee is standing at 1250 feet.

The United Southern Oil & Refining Co.'s No. 1 Guieterra is shut down around 1300 feet.

The Valley Oil and Gas Co.'s No. 1 Selina is rigging up.

Webb County—There is no activity reported in this county. As far as drilling operations are concerned. There is considerable leasing going on among speculators and local companies who are reported paying in the neighborhood of 25 cents an acre. J. M. Lane et al of Oklahoma has a derrick up for No. 1 Toma.

Zapata County—The Rio Grande Petroleum Company has abandoned operations and the lease has been taken over by the Webb-Zapata Oil Company which is being organized to drill one deep test and several shallow tests.

Duval County—But one derrick has been rebuilt since the storm which blew down all the derricks with the exception of the Empire Gas & Fuel Co.'s No. 1 Beecher. The derrick rebuilt was the Lyman Oil Co.'s No. 1 Lubby.

Jackson County—It is reported that Texas Company geologists have located a dome in this county and that the company will drill a test on the strength of this information.

Gonzales County—The Texas Southern Oil & Leasing Syndicate is drilling below 2200 feet in its No. 1 Lamkin between Ottine and Slayden in Gonzales county. The company has derrick up and machinery on the ground for a test two miles southeast of Prairie Lea in Caldwell county, and will spud in shortly. A derrick has arrived at Luling to be used in drilling a test near that city, the location to be selected in a few days. All of these wells are to be drilled to the chalk.

ARKANSAS WILDCATS.

Columbia County—Okla. Pet. Co., Waller 1, drilling at 500 feet.

Ouachita County—Humphrey Oil Co., Boyd 1, drilling at 2300 feet.

Ouachita County—S. S. Hunter et al., Lester & Halton 1, drilling at 1150 feet; and Straughan & Crawford, Garrett 1, drilling at 2850 feet.

Fred Rowe returned to Houston last week from a business trip to Shreveport and left Friday for Pittsburgh, Pa.

G. W. Hindman, president of the United Petroleum Co., and Mrs. Hindman, of Houston ,have gone to New York.

W. A. Mahoney and E. O. Gilbert, scouts for the Gulf Production Co. in the Desdemona section, were in Fort Worth last week visiting the company headquarters.

MOTOR TRANSPORTATION AND TEXAS OIL

THE transportation problem in West Texas has become so acute that any service or combinations of service that will give relief to the congestion there will be received by the operators with dispatch.

West Texas has conditions that have not been met with in any other fields of the country, or conditions that have existed in milder forms elsewhere, and which are so exaggerated in West Texas that they become one of the expensive considerations of oil companies and operators in the development of the fields.

The area under exploration for oil in the counties between Fort Worth and Dallas and the New Mexico state line, and between Wichita County and the San Antonio district, is so extensive that a complete network of railway lines would be necessary to serve the freight needs of the territory. Before the development of the country for oil, that vast area was a cattle country, with agriculture an important industry in certain sections of it. The needs of the country did not demand railway service except to a limited degree, and there were only two trunk line railroads, with four or five branch lines, serving a district 200 miles square.

With the finding of oil in West Texas counties, and the expansion of the fields in North Texas, it became necessary to move freight into the territory in amounts that the railroads have been absolutely unable to handle, and to take care of the movement of a volume of petroleum and its products that the railroads have likewise been incapacitated to handle.

And even if the rail service could have brought into Texas all the freight needed and ordered for use in these fields, its distribution to the different producing areas would have been a problem that the roads could not have begun to handle, for the reason that in certain districts drilling activities on a large scale are 20 to 40 miles from any railroad station or line. Materials for use in these far removed sections have to be transported over highways that had not been laid out for heavy tonnage, or over roads that were hastily cut through brushwood, and over hills and canyons.

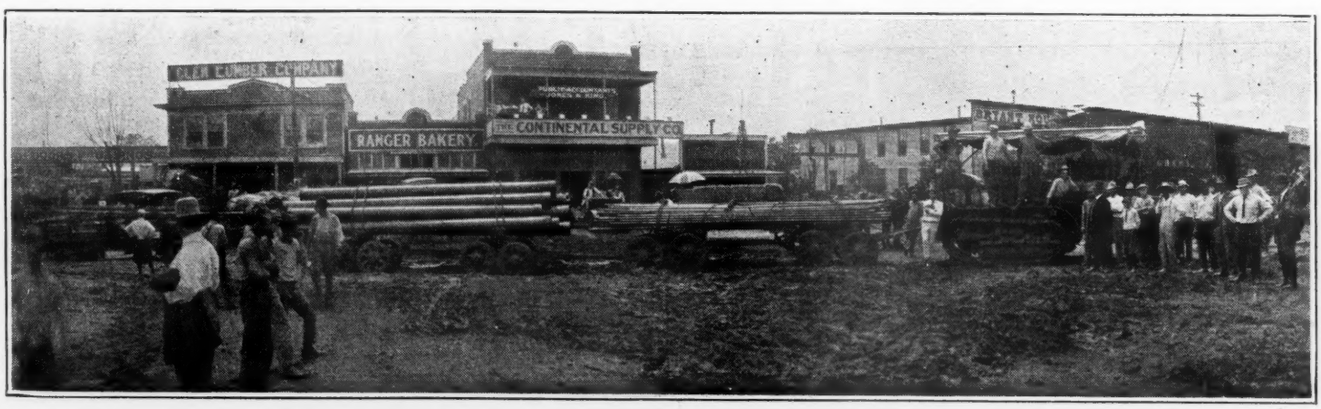
The result of this condition has been the introduction of overland transportation facilities on a scale of tremendous volume and expense. Several months ago it was found that there were 450 automobile trucks in use or sold for use in the Ranger field alone. Some of these machines were carrying timbers and steel equipment 50 to 90 miles to territory where no railway service was accessible, and where supplies could not be obtained in any other way. An estimate of the weekly expense for transportation, overland, in one West Texas county was recently put at $500,000, and estimated by a man who had spent some time in that particular field making a special study of the transportation question. Whether or not his estimate was out of line cannot be questioned without a consideration of the prices paid for hauling freight, an appraisement of the expense for upkeep on transportation facilities, and the cost of delay in getting materials to their final destination.

In one field where the biggest development is now taking place, every pound of materials for drilling activities, tanks, commissary supplies for laborers, and all freight for every purpose has to be hauled a minimum of nine miles, and a large part of it is freighted from more distant stations, 12 to 15 miles from the center of operations. The roads leading to this particular field are over ravines, hills and sand beds, and where a stretch of hard surface once existed, the heavy wagons have made ruts and holes that present almost insuperable obstacles. Because of the sand in this district, it is impractical to try to use automobile trucks, and wagons have been depended upon to supply the necessary materials for developing the territory.

The prices paid for teamsters are staggering. One operator is said to have recently paid a team freighter $1500 to move a boiler from Ranger to Desdemona, 15 miles. The regular schedule of prices in effect there provide for a man and team, for an eight-hour day, $12. Since it is impossible to make a trip to any of the nearest railway stations and back in eight hours, an overtime charge is collected, and the usual day's work brings the teamster $18 to $24. If he has a double team, his price is about 50 per cent higher. It is the team that counts, the driver being valued at $3 to $4 per day. A good horse eats up his value in feed every 90 days, at prevailing prices.

Thus it is seen that some more economical transportation facilities will have to be provided, and the fields are suffering each day, not only for the need of drilling equipment, but more especially for tankage, line pipe and equipment to take care of the oil produced. Anything that will mean a saving to the operators in hauling costs, and will facilitate the movement of freight, will be accepted, and will soon be in general use.

One of the executives of a major producing company was lamenting recently about the freight congestion to Ranger, saying that the situation is costing his company heavily in making it impossible to meet its obligations in the fields, as it could not get materials to carry out its programs. He was asked why he did not ship his field material to the nearest available railroad station, outside the embargo zone, and put caterpillar tractors on the job to carry it the rest of the way. It developed that it had been his opinion that the tractor would be impractical in West Texas on



ONE OF THE FIRST TRACTORS TO MAKE ITS APPEARANCE AT RANGER

account of the conditions of the roads, and that such a program would be too expensive to be of value.

Builders of transportation facilities have an opportunity here for some educational work that may prove to be of immense value to them. For example, it can be shown that a medium size caterpillar engine can account for a string of trailers, all loaded to capacity, stringing out the load in a way that will not be destructive to culverts and bridges, and can carry eight to ten tons, making an average of three miles an hour, over practically any kind of roads. The caterpillar type of tractor, and there are many good makes, can negotiate a mud hole or sand bed or hillside with comparative ease, and the expense for upkeep is comparatively negligible.

It is also pointed out by experts in overland transportation that a truck has a great deal more efficiency when pulling a load than when carrying it; and yet in the oil fields you see dozens of trucks each day, with two to five tons of casing or timbers on them, making no effort whatsoever to get the advantage of the pulling power of the machine by the use of trailers while the machine is actually carrying its load.

Experts have also carefully prepared tables showing the economy of using pneumatic tires on automobile trucks, and yet few of the trucks in the fields are equipped with pneumatics.

A big consideration in the operation of any machine is the accessibility of repairs. An idle truck in Ranger is costing the owner $75 to $100 a day, and a breakdown may cause a delay of several days or even of several weeks, where trucks are purchased with no consideration for the available supply of repairs.

These and other important questions are vital to the operation of oil field transportation facilities, and they are issues that are too lightly passed up by the manufacturer or distributor of these facilities, the sale being the main thing to be considered, the problems of operation being left to the purchaser.

During the heavy rains in West Texas last spring, it became impossible for any vehicle to negotiate the roads, and even the streets in Ranger were like southern Louisiana swamp lands. Operations were practically at a standstill. A string of trucks were bogged up on one of the main streets of the town, when a small caterpillar tractor came snorting along. It hooked on to three of the loads, and yanked them all out together.

In the sand hills of the Desdemona section a caterpillar tractor has been plying for weeks between the base of supplies and the field of operation, and its record has been such that several of the larger companies have recently put tractors of the same type into their service in this territory.

It is practically safe to say that the days of team hauling are limited. It is too expensive, too slow, and too congesting. One tractor can manipulate as much tonnage as half a dozen teams can account for, and at much less expense. A two-ton automobile truck can account for four tons, by using a trailer, with comparative ease.

A manufacturer of a caterpillar type tractor told a representative of this journal recently that he has sold ten tractors in West Texas within the last month. Other companies have not been idle, and it is safe to say that the tractor is coming to fill a large place in the transportation programs of oil companies in West Texas.

Truck dealers have been doing a heavy business in this section since the development of the field began. They will be called upon now as never before to prove the advantage of automobile truck transportation. The tractor and the truck will solve the problems of the territory. A sharp line of competition is already being developed. There is room for both the tractor and the truck, and local conditions that are peculiarly adapted to each.

Motor Trucks Fast Becoming More Vital to Oil Industry

IT has been declared most wisely that the worth while man is the one who causes two blades of grass to grow where but one grew before. This line of thought leads to the truth that the man who produces two pounds of beef where but one was produced before, or who draws from the earth two barrels of oil where but one was drawn before, is also a worth while man.

Two blades of grass can be made to grow where but one grew before in two ways. One is by so tilling and fertilizing the soil that its output will be doubled, another way is to grow two crops a season, where but one crop has been considered possible. And so, it can be truthfully declared that had it not been for motor trucks, the development of the North Texas oil fields, which just a little over a year ago were but potential producers of large quantities of oil, would today not be half of what is weekly recorded. For motor trucks have come into their very own in the new Texas oil fields.

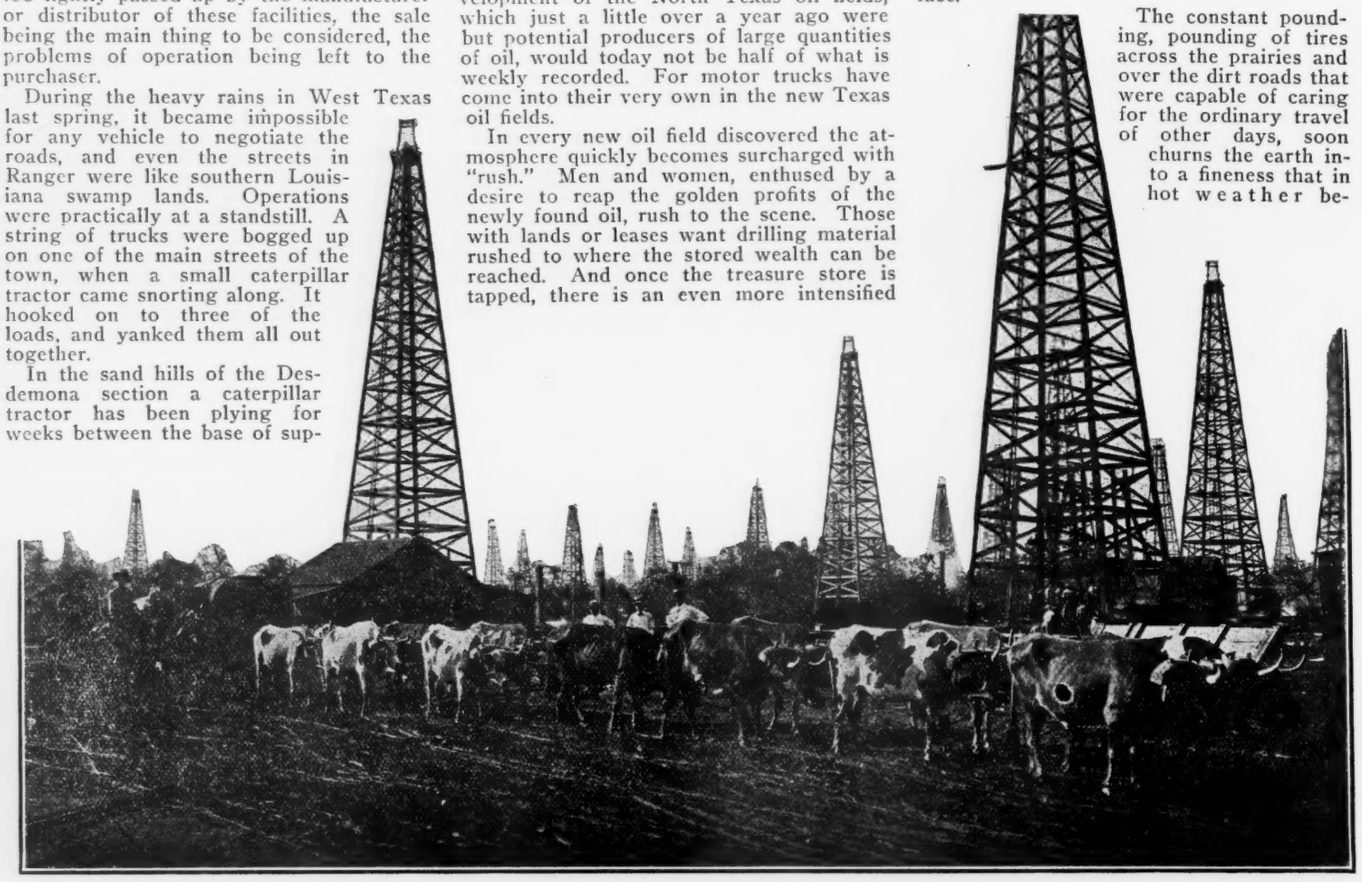
In every new oil field discovered the atmosphere quickly becomes surcharged with "rush." Men and women, enthused by a desire to reap the golden profits of the newly found oil, rush to the scene. Those with lands or leases want drilling material rushed to where the stored wealth can be reached. And once the treasure store is tapped, there is an even more intensified rush to draw therefrom the fluid that has such a profitable selling value.

Those Oil Field Roads

Now, it so happens, and it will continue to be the case, that oil fields are not located with a regard for the thoroughfares leading to them. They are developed solely with a regard to the oil itself. No matter where they are found, roads will be made to reach them.

And during the pioneer days, such roads! Not the famous two "streaks of rust" that have inspired so many jeers, but across the virgin bosom of Mother Earth go the heavyweight vehicles laden with the precious machinery so urgently needed to tap the treasures that lie beneath the surface.

The constant pounding, pounding of tires across the prairies and over the dirt roads that were capable of caring for the ordinary travel of other days, soon churns the earth into a fineness that in hot weather be-



THE PATIENT OX FINDS A PLACE IN THE OIL FIELDS OF SOUTH TEXAS—A "TEAM" AT WEST COLUMBIA

Service MOTOR TRUCK

In Size, Strength, Power and Actual Loading Capacity, SERVICE MOTOR TRUCKS offer unusual value for the money

A Service Truck is Easy to Handle

Unusual Strength, combined with remarkable flexibility, accounts for the extraordinary durability of Service. There is super strength in every part, yet no excess weight.

We carry $50,000.00 stock of Service parts in Ft. Worth

"INVESTIGATE SERVICE TRUCKS"

SERVICE TRUCK CO., OF TEXAS

(INCORPORATED)

FT. WORTH DALLAS WICHITA FALLS RANGER GRAHAM

comes dragging miles of wearying worklation for animal-drawn vehicles to negotiate, and a test supreme for motor trucks to navigate. And then comes the rain! And with the coming of the rain, these roads of dust, deep and suffocating, become quagmires of heavy, sticky, halting mud that has a way of getting tangled into the spokes of the wheel and which is a constant challenge to those who would reach the oil fields from the railheads.

Burkburnett's Experience

Take the Burkburnett field, for instance. Heaven knows the railroad congestion at Wichita Falls became a thing that bred worry and vexation early after the discovery of the oil field at Burkburnett. Overnight, almost within the twinkling of an eye, Burkburnett emerged from being but little better than a flag station to being a busy, busy station with a volume of business that any city of twenty times its population could well afford to be proud to have.

And it was at this point that the motor trucks were called into play, and it was the lumbering motor truck that saved not the day, but many days, in the development of the Burkburnett field. And what is here written of Burkburnett applies with equal force to all the other Texas fields that have become known to fame, to investors and to suckers, in the last year or thereabouts.

Material could be gotten to Wichita Falls quicker than it could be gotten to Burkburnett. And once material needed for oil field development reached Wichita Falls, the urgency of the wants that prevailed made it imperative that no unnecessary chances be taken in seeing that it was where it could be used with a reasonable hope for profit.

That is why over 95 per cent of the well drilling machinery used in developing the Burkburnett field was transported from a railhead at Wichita Falls to where it was to be used with motor trucks! Nor should it be forgotten that machinery and materials used in oil field development and production work is not a frail, gauzy sort of stuff! On the contrary, it is weighty, bulky, and made to stand up under terrific punishment.

The Engine Must Be Powerful

This extra heavy machinery and material, coupled with the hard going of the country roads and across country routes, was a problem that only motor trucks made right could solve with speed and satisfaction. Every possible ounce of weight should be taken from the truck itself, for every pound in the truck meant that a pound less had to be left off the truck when it came to moving the supplies. In addition to this, the engine had to have power, power, and still more power, in order to send forward the stuff that was so urgently needed.

It was on this account that standard built motor trucks at first did not give the satisfactory service that the oil field operators hoped to get. Take a standard built five ton truck, for instance. Its weight alone was equal to its full carrying capacity, and frequently it exceeded this carrying capacity. This meant that the margin for overload was reduced just that much, and overloading was necessary if the heavy material and machinery was to be gotten to where it could be employed with profit. On the other hand, a two and a half ton truck, while its frame would stand up under its probable load in the oil field haulage game, its engine would not send it forward when the heavy going was reached.

Good Truck Drivers Necessary

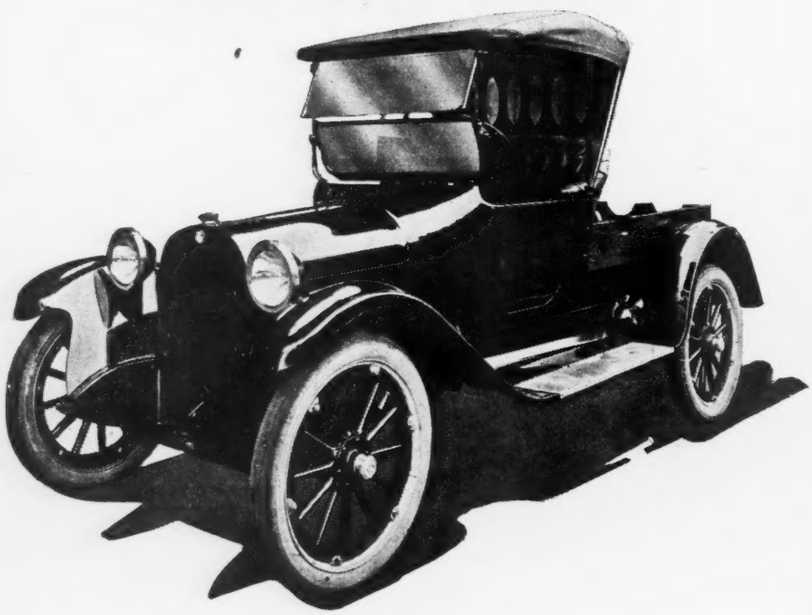
Aside from getting a truck that would get there, once a start was made; would take care of overloads when the occasion demanded, and would stand up under the most grueling punishments, those who have developed and who are developing the oil fields of Texas are finding it more or less of a difficult matter to obtain competent truck drivers. A good truck driver, who knows his power plant and takes a pride in its performance, is altogether too rare, but can every once in a while be found.

Motor Truck Here to Stay

But the big thing of this yarn is that the motor truck is linked inseperably with oil field production. It is just as much a part of oil field exploitation as the rig that sends the bit down to where the oil is stored, or the pump that brings the liquid to the surface. It is the link that has made fast and has shortened the time between discovery and distribution. It is the one means that is known that can go when the going is heavy, when the weather is biting cold, or when the sun shines with all the blighting force of the midsummer's days.

A motor truck is not a thing of thrills. It in itself is devoid of romance. But when it comes to making two minutes be reckoned as one, and to being the very bridge over which the realized hopes are given passage into the land of the things that are, a motor truck is at once the inspiration of realized excitement and about its work one with the vision of poesy can weave a tale that tingles with the stuff whence comes the action of romance. Motor trucks are not only a pare of the oil field development; they are a great big throbbing, vital part.

DODGE BROTHERS
MOTOR CAR



Oil Field Special

These cars have a good, substantial, comfortable seat upholstered in real leather. Also have oversize tires and heavy springs.

We can make immediate delivery on a few of them

Trinity Motor Co.

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Co-ed (cooly, to freshman who has just picked up her handkerchief)—Thank you. But if I should happen to drop it again, please don't bother. It wasn't you I meant.—Penn State Froth.

Ranger Field Is Two Years Old

Faith of W. K. Gordon Rewarded; Now One of World's Big Pools

IT was in October, 1917, just two years ago, that the Texas and Pacific Coal Company completed an 1800 barrel well on the J. H. McCleskey farm, one miles south and west of Ranger, and thereby opened up what has since proven to be one of the greatest light oil producing districts in the world.

Although the McCleskey is accredited with being the discovery well of the field, it was not the first test to prove the existence of a deep sand. In August, 1917, the Texas and Pacific Coal Company, drilling on the Walker lease, half a mile north of Ranger, got a gas flow from the black lime and stopped drilling, evidently thinking it would be impossible to drill through the lime. This well made gas for several months, and then blew itself into an oil producer, and has been one of the valuable wells of the field.

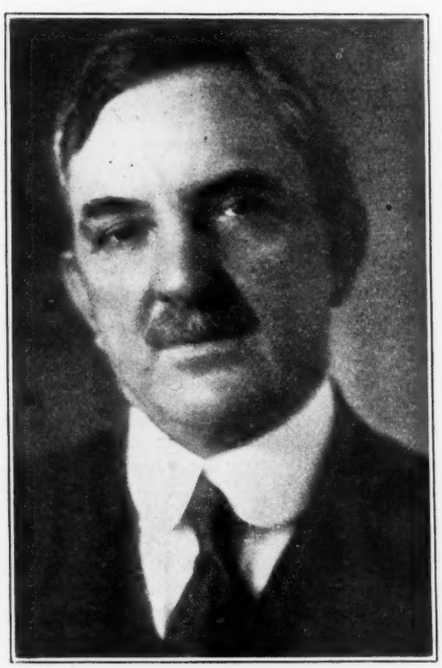
Showing in Stephens County

About the same time that the Walker well got the gas showing, the Texas Company drilling on the Parks lease, in Stephens County, got a sand that showed gas and some oil. It was later completed for a 300 barrel well, and is still making more than 200 barrels a day.

However, the McCleskey well, being the largest producer of the district, is accepted as the discovery well, and really started the rush to Ranger that has resulted in the development of one of the phenomenal fields of the nation.

After the McCleskey well was completed, the same company got another good producer on the Davenport, almost an offset to the McCleskey, and all the major producing companies of the country got busy for acreage protection in Eastland and Stephens Counties.

One of the conditions on which the Texas and Pacific Coal Company had agreed to test the territory was that property owners would lease them sufficient acreage in the Ranger territory to protect them and compensate them for the risk of the expenditure in making the tests for oil. As a result they got about 375,000 acres in leases, in what has proven to be the cream of the field.



W. K. Gordon, discoverer of the Ranger field, who stayed with the game until his belief in oil in Eastland County made good.

Gordon the Explorer

The Texas and Pacific Coal Company was organized back when W. K. Gordon was a young engineer, in Texas to survey a route for a railroad from Strawn to Dublin. He found in his explorations that coal in commercial quantities lay beneath the surface in the vicinity where Thurber now stands, and the company was organized as a coal mining corporation. Many years later, after the company had grown under the management of Gordon and Edgar L. Marston to a $4,000,000 organization, Gordon succeeded in getting the endorsement of the company for making tests for oil in and around Strawn. The shallow field there is still productive, and has helped to enrich the company for several years.

Gordon always believed that deep drilling would get oil in the Ranger section, but for many years the price of crude would not justify any great expenditure for wildcatting, and deep drilling has always been expensive. In the late months of 1916 and early in 1917, Gordon got the backing of his company for making deep tests, on the conditions mentioned previously. It is said that the Texas and Pacific Coal Company made considerable sacrifice in financing the leasing and drilling campaigns, but was willing to back the judgment of Gordon to the last dollar of its credit.

And Now—

Before the end of the second year of its life, the Ranger field was producing 2,000,000 barrels of oil a month, with a value of $4,500,000. This oil was coming from approximately 300 wells, which cost in round numbers $15,000,000. There were 500 other drilling wells that would cost $25,000,000 more, and the actual cost of drilling wells is only one item in oil field development.

The Texas and Pacific Coal Company, later changed to the Texas and Pacific Coal and Oil Company, realized that it could not hope to develop thoroughly the vast acreage that it held, and it transferred many thousands of acres to other companies for a bonus and one-half of the oil produced. On this agreement some of the biggest producing companies of the nation have entered the Ranger district, and are carrying on drilling campaigns that are pushing the field out in all directions, entailing the expenditure of more money than has ever been spent in the development of any field before.

The Ranger Field

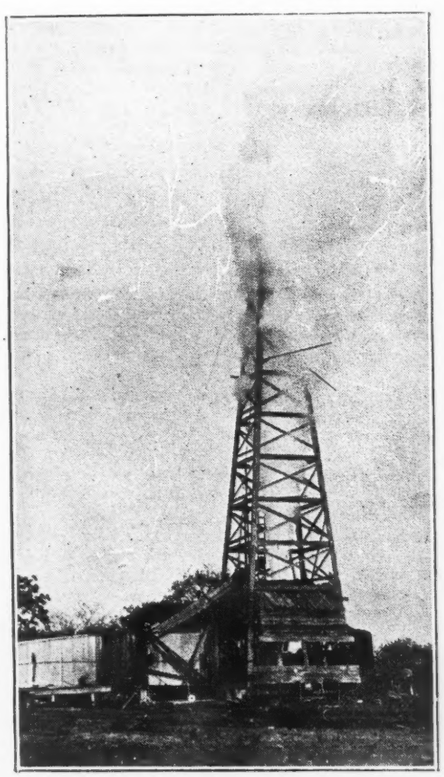
The Ranger field proper embraces only the northern part of Eastland County, although in general terms the "Ranger District" is used to describe the producing sections of Eastland, Stephens and Comanche Counties. That this classification is too broad is evidenced by the geological conditions of the different producing sections, and the further fact that there is intervening non-productive territory of several miles in extent between the Ranger field and the production in the southeast corner of the county known as the Desdemona field, and again between the Ranger field at the producing sections in Stephens County on the north.

The Ranger field produces the oil from the Bend series of the Pennsylvania formation, there being varying depths at which the oil is found in commercial quantities. Some few of the wells have shown production in the black lime overlying the sand, as in the case of the Walker. The upper sand is near the contact of the black lime and Bend sand, and the lower sand is 50 to 150 feet deeper than the first pay. These geological aspects are treated in detail in another article.

The Ranger field is essentially a big man's territory. Although the percentage of producers as related to the total number of wells drilled is unusually high, about 68 per cent of the tests in Eastland County making commercial wells, the cost of operations is such that a man with limited capital cannot afford to take the risk, as a dry hole would put him in bad health.

The conditions under which the field was opened up also made it hard for individuals and small companies to get a hold, and the most of the acreage in the county is now leased by some one of the major companies of the country. In some instances, however, small tracts were passed up, and have been pounced upon by stock selling companies offering the people "A rich op-

(Continued on Page 102)



This is the second producer in the Ranger field—The T. & P. Coal & Oil Co.'s No. 1 England, offsetting the famous discovery well. When this well came in, Ranger's future was assured.

History of the Gulf Coast Development

From Spindle Top to Blue Ridge

Since the first issue of The OIL WEEKLY, at that time known as The Gulf Coast Oil News, was printed, hardly a month or a week has passed without some one inquiring of us regarding the history of some Texas field, its production by years, who brought it in, etc. Possibly this latter question has been caused by the claims of numerous "geologists" who assert they "brought in" Humble, Spindle Top, and half a dozen other fields.

When the question came up as to what should be contained in this edition, it was quickly decided that a history of the Gulf coast—however much later criticism it might entail for its sins of omission—would be one of the features. This history we present herewith. It has been compiled at the expense of much trouble—in connection with a list of big producers brought in in Texas, and while it doubtless commits many errors of omission, we hope that it fills a need which is well recognized.—Editor.

IT is almost a sacrilege to say that neither Spindle Top nor Corsicana was "first" in the discovery of oil in commercial quantities in Texas; but it is a fact that neither of the two fields can claim the credit of being the initial field in the Lone Star State. The first oil produced in Texas was produced in Nacogdoches County back in the '80's, and the first pipe line in the state was built to take care of this production.

The wells were from 150 to 200 feet deep and some of them flowed as much as 150 to 200 barrels a day, if the chroniclers of old weren't too enthusiastic in their estimates on their production. However, they dropped rapidly and soon had to be put on the pump. This development led to the naming of the village which was located nearby as "Oil City," the first real oil city in a state where now there are few towns that can't work up a bona fide claim as an oil center.

SPINDLE TOP

SPINDLE TOP! It would seem that no other name would be fitting to lead off with under the above title. Yet Spindle Top is fast passing into a name—and a legend. And a man who tells legendary history is letting himself in for a lot of gratuitous correction. Getting the dope on Spindle Top from the old-timers has, in most instances, been like pulling teeth. Wherefore we feel justified to say to them, when they do not agree with the particulars of the story as here set forth, since they would not gratify our never satisfied yearning after "the truth," let them forever after hold their peace. And to the many who have helped with a bit of history here or there to piece this tale together, we pay our sincere respects and offer our heartfelt thanks. With our apologies thus set forth, we may proceed to "the story."

Little Mound

In the days before the oil boom, there was a mound about three miles south of Beaumont, then known as Sour Springs mound. The name came from the character of the water in a series of wells which had been made there. This water was sour and gave off quantities of sulphuretted hydrogen. Both the wells and springs and ponds around the base of the mound were strongly tainted with sulphuric acid. Naturally, these indications were significant to many who knew about them or learned of them, and more or less sporadic drilling had been done on and near the knoll or mound for a number of years before the precious fluid was finally brought in with a rush in 1901.

But none of these pioneers drilled deep enough to strike oil. Patillo Higgins was one of these pioneers. Walter B. Sharp, who later organized the Texas Company, in company with J. S. Cullinan, was at one time a drilling contractor, and in 1893 contracted to drill for oil near the base of Spindle Top mound. He used a light rotary with a 70-foot derrick, a 25 horsepower boiler and a 16 horsepower engine.

Failure on the part of the parties for whom Sharp was drilling to supply him with fuel, water, casing, etc., according to their agreement with him, and terrific wind and rain storms during that spring, all conspired together to defeat the object of this well, and it was finally abandoned at 418 feet. The log of this well, as kept by W. Kennedy at the time, follows:

Log of Well

FORMATION	From	Feet to	Depth
Sand	1	20	20
20 Feet of 14-inch conductor pipe set.			
Dark gray sand with particles of lignite	20	27	27
Blue clay and sand	27	40	40
Blue sand with iron pyrites	40	60	60
In this sand a strong flow of sulphuretted hydrogen was developed after the well had remainied at this depth all night.			
Blue clay and sand at			60
Fine greenish blue sand	60	75	75
Fine light blue clay with iron pyrites	75	118	118
Drill choked at 95 feet.			
Grayish blue sand	118	140	140
Blue clay	140	160	160
Grayish blue coarse sand with iron pyrites	160	170	170
Grayish blue fine sand	170	195	195
Water in this sand irregular from pump; about half lost in sand.			
Blue sandy clay	195	200	200
At 200 feet a small flow of sulphur water, accompanied by a small quantity of sulphuretted hydrogen gas. Water black.			
Gray sand, with coarse water-worn gravel and some fragments of wood. Gravel plentiful to 208 feet, where it became less and showed only scattering gray-black pebbles	200	214	214
Fine grained gray sand	214	238	238
Fine grained gray sand with pieces of wood	238	255	255
Although three pumps were running, the water was lost at		255	
Bluish gray sand to bottom of hole at			418
Work commenced March 22, 1893, and ceased in July, 1893.			

Higgins' Gasser

It is related that, during the drilling of the well, Patillo Higgins, hearing that gas had been passed around 60 feet, drilled a small well on his own account near the derrick of the Sharp well. Sure enough, at about 60 feet, it began blowing mud and gas and Higgins proceeded to fire his boiler with this gas, and laid pipe from well to boiler for the purpose. The pipe ran to the far end of the boiler and was finished off with a 4-inch piece for a burner. At one time the fire had been out for several days, and the fireman—McCarty by name—was instructed to fire up. The son of Erin crawled into the firebox and up to the "burner," struck a match—and next found himself outdoors, having left the firebox feet foremost when the accumulated gas fumes of several days had been touched off by the match. He was not badly hurt, beyond the singing of his hair and mustache, but the thorough shaking-up had convinced him that he was not cut out for the oil industry, and he left that night for parts unknown.

Higgins exercised some further ingenuity in utilizing the gas from his 60-foot well to cook with and light the sleeping tent with. One night the light blew out in the sleeping tent and nearly killed all the occupants.

The First Big One

Almost any one can tell our readers that the famous Lucas well, the first big gusher in the country, the forerunner of all the subsequent great development of oil fields in the Southwest, was brought in on January 10, 1901.

"Captain" Lucas had been retained by the Guffey-Galey interests, which subsequently became the Gulf Production Co. of Texas and the Gulf Refining Co. of Louisiana. This company still has quite extensive holdings in the old Spindle Top field. The Lucas well was drilled by Al Hamil, who later went to California as production superintendent for one of the large companies there. In partnership with his brother, C. G. Hamil, Al Hamil moved a rotary rig from Corsicana to Spindle Top, drilled to the depth of 1200 feet, and brought in the famous well, which started off at a 4000-barrel a day clip. They were over a week getting the well under control.

Other wells drilled at Spindle Top in those first booming days of the field "ran away," and many are the tales of how they were finally brought under control, or burned up, whichever the case happened to be. One of the first really wild wells was the Beaumont Palestine Oil Co.'s No. 1, which flowed for three days and nights, all efforts to shut it in being unavailing. Several men, working to get the well under control, were overcome by the gas fumes.

Two are said to have died from asphyxiation. Just when things were looking very dark, a man arrived with a diver's outfit, having been called from Galveston. History does not record the originator of this idea, as it should. For the man in the diver's airtight outfit, fed with oxygen from the pump attached, made short work of going up on the rig floor and doing the necessary work to bring the rampant well under complete control. Another wild well was the Dober well, which was also the first eight-inch gusher at Spindle Top—all previous gushers having been of smaller diameter. The plucky driller of this well went back repeatedly in an effort to shut it in, each time being driven off by the dangerous gas fumes. Several times he was overcome and had to be revived after the fashion used in cases of drowning. Each time he dashed into the gusher again. At last his efforts availed and he got the well under control.

Thought They Were "Permanent"

As is now known to be the case in all coastal oil fields, the heavy initial flow of oil from a well is caused by the gas pressure in the well. After this pressure diminishes, the oil in the well has to be pumped to the surface or the flow fostered by means of artificially produced air pressure. When Spindle Top was discovered, however, the flow from the first gushers was expected to last indefinitely, as the flow from an artesian water well. While this belief may not have been shared in by the more scientific and accurately informed operators and others very closely associated with the oil industry, the idea that the great initial flow from the gushers was of a permanent nature was quite prevalent. Unscrupulous stock-selling companies were formed and floated successfully and widely —successfully, that is, for the promoter. And then, as now, plenty of willing "suckers" were found just waiting, so it would seem, to be separated from their money by the first suave and benevolent stock salesman to reach them. Companies were organized on plots of ground sixteen feet square, and derricks erected anywhere in the general locality of Beaumont were pictured and advertised as being located "in the heart of the wonder pool." Quite a similarity, it would seem, in the advertising system of the old-timer and his more modern successor.

What One Company Did

A certain state official tells the story of how his company guaranteed to get a gusher—and all the land he had was located half a mile from production—with dry holes in between. He went to a well known operator who later founded a great company, and told him his plight. As a result of his visit he paid $10,000 for a tract big enough to build a derrick on, and drilled in a gusher as per contract!

The fame of Spindle Top became so great that excursions were run to Texas from out of the state points. W. V. Bowles, who is now assistant superintendent of production for the Texas Company on the Gulf Coast ,tells the story of how he used to go out, stick some cotton in his cars, pull his old hat down tight, open the gate valve and let 'er spout, to the edification of the trainloads of spectators who came from afar to see the wonder. Bowles was little more than a mere boy at the time, but drilled in several big wells.

"Busted" Drilling Gushers

Asked if his company was a financial success, he says that it "went busted drilling 10,000 barrel wells!" The price of oil dropped down until there was practically no sale for it. The story is told that the ravines running down to the river were absolutely covered with oil, and one old-timer is authority for the statement that a person could go in a boat all the way from Beaumont to Orange on oil—the oil of course being on the waterway.

The price dropped down steadily until it got as low as ten cents—with no takers at that price.

Naturally the boom brought thousands to Beaumont. The town became congested with oil men and hangers on. To leave out the incidents that made it a counterpart for Pennsylvania's "Hell Hole" of the early days, is to leave out a part of the history of the town which cannot well be associated with the orderly, businesslike city which later developed out of the boom.

Then as Now—And No Burleson!

It may be gratifying to those who have stood in line recently at Goose Creek, at Burkburnett, Wichita Falls and at Ranger, waiting for the mail, to know that none of these late-day booms affected postal service as did the Beaumont boom. One negro with an excellent degree of intelligence is reported to have made a small-sized fortune by getting in line regularly before the general delivery window, and then selling out his place to the highest bidder as he neared the window!

The productive area at Spindle Top was —until within the last few months—the smallest of any Texas field, although the wells were the biggest. At Spindle Top, too, the oil was located on top of the dome, instead of along its edges. However, the Gulf Production Company—it is a coincidence worth mentioning, as it was the predecessor of the Gulf that got the first Spindle Top well—completed a deep producer off the dome recently, the first deep drilling ever to be rewarded by production in the history of the pool. This well came in flowing 250 barrels, and is now on the pump. Several rigs are up and other wells are drilling offsets to the Gulf well as this is written, and completions may be expected at any time.

The peak of production for Spindle Top was reached in 1902, when the field produced more than 17,400,000 barrels. It is now producing about 1600 barrels a day.

JENNINGS, LA.

The Jennings fields, also known as Evangeline, in Southern Louisiana, was opened up in 1901, the same year that Spindle Top was brought in. The first well was drilled by Heywood Brothers, and it was this field that was the scene of their greatest triumph. While the biggest well of the field was a 15,000 barrel well—according to early estimates—a score or more of wells ranging as high as 8,000 barrels have been completed in this field.

It was this field that led to the development of one of the most important of oil field inventions—the screen—and it is at Jennings that one of the big oil well screen plants is located. Other plants are located at Houston, where there are four concerns manufacturing well screens.

The pay strata was a loose bed of sand which gave much trouble, wells sanding up with great regularity. At one time it is recorded that the sand which came up with the crude oil wore out a pipe line! However, drilling in this field presented little difficulty, rock being scarce.

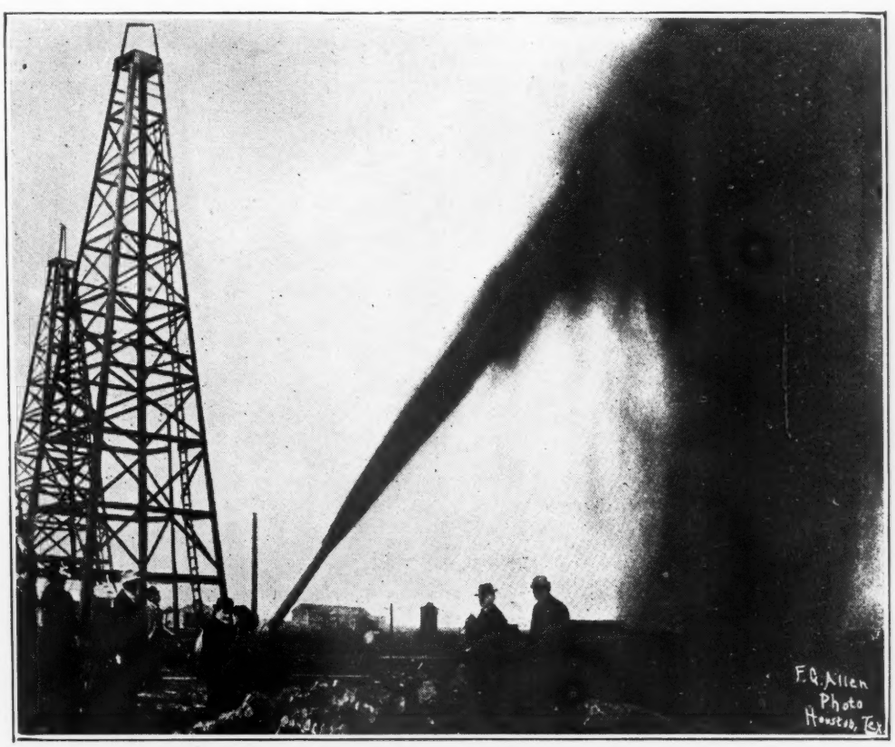
One well at Jennings, drilled by the Heywood company, flowed for six months, during which time it produced more than a million barrels.

Salt water was also a production-killer at Jennings—as it has been in all the South Louisiana fields, as may be discerned from reading the following by a Houston oil man, back in 1912, appearing in the Fuel Oil Journal that year:

Fickleness of the Human Rib

I blew myself on Isabel,
With velvet from a flowing well
At Jennings when the prime was on;
Nor cared she that the grime was on
The hand that shoved the money through

For ropes of pearl and sunburst, too—
She wore engagement ring of mine,
Graved with my name;
But when my spouter went to brine,
She jumped the game.



HERE IS ONE OF THE FIRST BIG ONES AT SPINDLETOP

Again, I blew myself on Sue,
When Benck brought in his No. 2
At Vinton, when the yield was young.
I held a lease. The field was strung
With hope's red rainbows, and on her
I blew myself for silk and fur.
She pledged me on my solitaire—
And kept the same;
But later, when I busted there,
She jumped the game. —W. C. M.

The production of Jennings field increased steadily from 548,617 barrels during 1902 until it reached the pinnacle of its production in 1906, for which year pipe line runs totaling 9,025,174 barrels of crude are accredited to it. Since that time the production has steadily decreased, and Jennings now is considered a very minor factor in the production of oil.

When the interests in the Texas Company obtained the option on the Sour Lake property, the prospective purchasers were to have the right to drill a specified number of tests before making the principal payment. Mr. Sharp, to whom was entrusted the important task of testing the land for oil, drilled in a 10,000 barrel well, shut it in until a rainy night, opened it and saw it flow a solid 6-inch stream of oil more than 100 feet through the trees. The result was kept secret, the option exercised, and the development that followd made millions for the Texas Company, and is still a large source of income.

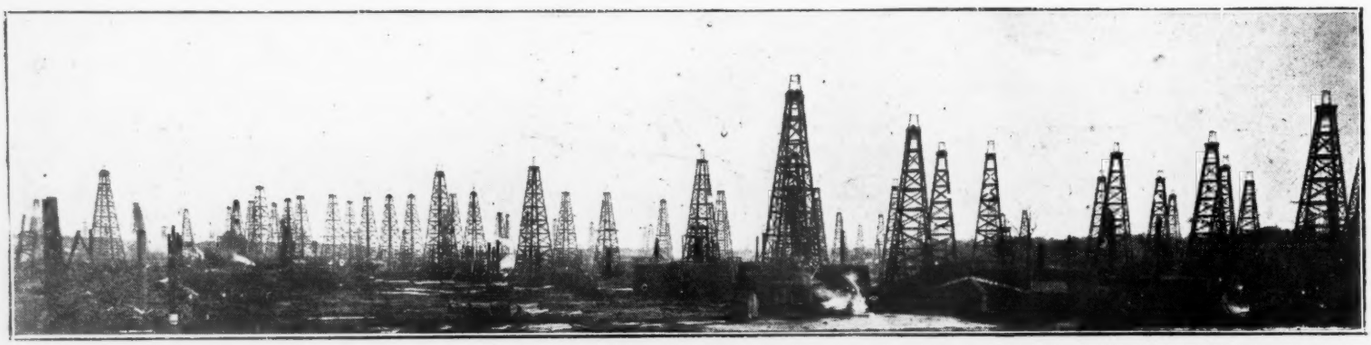
On June 30 the production of the field was 29,250 barrels from 150 wells. At this time the Texas Company reduced the price to 25 cents per barrel.

rock found on the Wirt Davis tract at 800 feet.

Up to February, 1904, the field had produced about 8,000,000 barrels of oil. The following is an extract from the Oil Investors' Journal for October, 1904: "At Sour Lake the big wells on the north side are falling off. The two Simms wells which started off at 1200 barrels each, are now doing about 1800 barrels combined. The field is making from 13,000 to 15,000 barrels. Prices range from 32 to 37 cents. The quotations are 35 cents."

Salt water began to come in early in 1905 on the Wirt Davis tract, and by February production had decreased to 9,000 barrels daily. By the end of the year it was below 6,500 barrels a day.

Nineteen hundred and six saw the completion of 74 wells, 54 of which were producers and 20 dusters. Most of the completions were small pumpers. On December 31 the production was 6,000 barrels. The production on December 31, 1907, was 5,870 barrels, and on December 15, 1908, it was 5,260 barrels.



THE BATSON FIELD IN THE EARLY DAYS

SOUR LAKE

The first development at Sour Lake, which is some 18 miles west of Beaumont, in Hardin County, Texas, was in 1893, when a little 16 per cent (Beaume) oil was found at a depth of from 260 to 370 feet. This was not developed commercially. In 1895 the Savage Bros. found oil in several shallow wells. In 1898 the Gulf Coast Refining Company built a small 100 barrel refinery and five wells were drilled, none of them exceeding 280 feet in depth. In three of them the Savage Bros. found oil at 230 feet of about 16 gravity.

In 1901 deep drilling started, at which time the Guffey Company drilled a 1200-foot well on the west side of the field. This well had several good showings, but never was a producer. The Great Western well in the Rodgers tract was drilled to a depth of 1500 feet, and had some gas and a large quantity of hot water.

The Great Western Company in March, 1902, struck a natural flow of oil in a well 500 feet south of the Wirt Davis tract, at 683 feet. This well quickly choked off as no screen was set.

In May, 1902, the Atlantic & Pacific well flowed over the derrick in the presence of representatives of all the large companies. On the following July 11, Guffey No. 2 blew out, and the next day Guffey No. 3 did likewise. On the 18th the Sour Lake Company No. 2 came in as a gusher. A little later the Sour Lake Company had a well which made between 5,000 and 10,000 barrels from a sand at 375 feet.

While there had been a great deal of interest in the field up to this time, there had not been excitement that is usually attendant on the birth of an oil field. On January 7, 1903, the Roche well came in at 10,000 barrels, which quickly declined. By February 15 the production of the field was 700 barrels daily from six or seven wells. Oil at this time was selling at from 68 cents to 72 cents.

It was at this time that the Texas Company, backed mainly by John W. Gates, bought 850 acres in the heart of the Sour Lake field for $900,000.

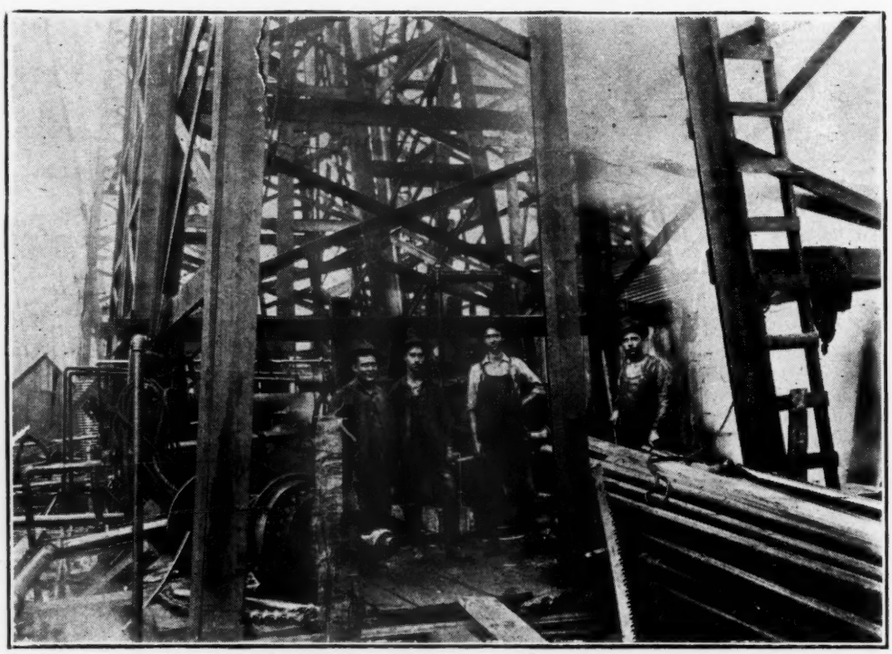
A production of 100,000 barrels daily is shown in a summary for August, 1903. At that time 220 wells had been completed or were drilling or derricks up. There were 75 producing wells. About 50,000 barrels of oil was being run and the same amount stored.

In April, 1903, the price of oil was from 60 cents to 70 cents a barrel, and by August, due to overproduction, it was down to 15 cents. All oil at this time was produced from shallow sands which did not hold up their production.

At that time all oil was produced from the shallow sand at 370 feet on what was known as the Shoestring tract, and a cap

There was some excitement during the first part of 1909 over deep sand, but several failures soon discouraged the operators. On December 15 the production was 3,550 barrels. It held steady for two more years.

On May 17, 1914, West and the Humble Oil Company completed a well on school land about one mile north of previous production, making from 1500 to 2000 barrels.



SHARP'S NO. 2 ON THE SHOESTRING, AT SOUR LAKE, 1903
Left to Right—Dan Price, E. W. Hammond, Willard and Jim Murphy

This started another boom for Sour Lake, and was the prelude to an extensive drilling campaign. On June 29 production had been increased to 27,250 barrels daily. The oil in the new sand had a gravity of 21 Beaume, and was found around 2300 feet.

During the latter part of 1914 Sour Lake again experienced a small boom due to extensions to the south and east. However, the new extensions did not hold the production of the field up to the mark. In 1915 the production held steady. The production on December 15 was 13,475 barrels.

In the second week of May, 1916, the Tarver Company completed its No. 11 on the 80 acre lease of the Hardin County Oil Company, north of the Producers big fee. This well came in at 2000 barrels, and two weeks later was making 1200 barrels. This started another boom in the field, and extensive drilling had raised the production to 17,000 barrels by August. Since that time, however, it has been steadily declining, and on September 15, 1916, the production was only a little over 11,000 barrels.

On the Hardin County tract the Humble Oil Company's No. 14 Hardin came in during the fall of 1916, making 14,000 barrels, and made more than a million barrels before it stopped flowing a few months later. It is still making 150 barrels a day. Other big wells were finished, the Humble Oil Co. getting one producer which ran wild and flowed better than 15,000 barrels a day for a few days during the winter of 1917. The Gulf Production Company bought out the Tarver Oil Company for more than a million six hundred thousand dollars, and still has considerable production on this tract. The Texas Company's fee tract, adjoining the Hardin County tract, has produced several big wells since 1916, and every now and then a good well is reported on this tract.

Living conditions at Sour Lake are about as ideal as in any coastal field—in fact, may be considered the best. The larger companies have built homes for their men, and Sour Lake is a favorite place for the man with a family to work.

The field is now producing better than 7,000 barrels a day. The deepest producers ever finished in Texas have been completed at Sour Lake. The Yount-Lee Oil Company has completed two wells below 4000 feet making more than 10,000 barrels each. Due to their extreme depth, difficulty was experienced in handling them, and they were rather disappointing. There is no doubt that eventually much deep oil will be produced at Sour Lake, and probably other coastal fields.

SARATOGA

Saratoga is another field which can lay claim to being one of the oldest in the state, the first well there having been drilled during the early '60's. This first well had a showing of heavy black oil. A spring pole was used similar to the one used by Colonel Drake in his discovery well in Pennsylvania. Some time later the Savage Bros., on the advice of Major Ottley, a geologist, drilled a well to a depth of 250 feet on the Cotton tract, which was estimated at from 10 to 15 barrels of 15 gravity oil.

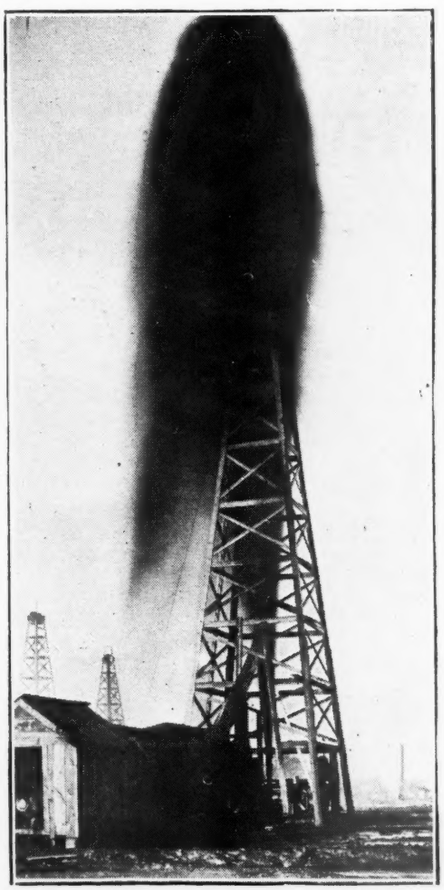
In 1901 Ben Hooks drilled Hooks No. 1 to a depth of 1000 feet, getting a 500 barrel well of 18½ gravity oil. The Rio Bravo and Guffey companies have controlled the field practically from the start, although the Sun Company and several smaller concerns have had fair production.

As soon as Hooks No. 1 was brought in, Guffey and the Texas Company started pipe lines from the field to Beaumont via Sour Lake.

Development has been slow in the Saratoga field. At first it was difficult to get supplies, etc., over the roads, and development was necessarily slow. Later the Southern Pacific railroad, operating as the Rio Bravo Oil Company, purchased the largest acreage in the field from the Beaumont Petroleum & Liquid Fuel Company, and their policy has been to let their acreage lie undrilled as long as they can buy oil cheaper than they can produce it. As a consequence, the Rio Bravo still has a large area of undrilled territory (inside locations).

Saratoga, until the summer of 1918, had never been a sensational or phenomenal field, and is known as the most consistent field in the gulf coast. It has had some big wells, but development has been gradual and no booms have been experienced as at Sour Lake, Humble and Batson.

The first oil to be delivered by pipe lines was in October, 1903. The Guffey Company had taken over the pipe line of the Star Petroleum Company and handled the first runs. The entire production for 1903 was only 100,000 barrels.



GUFFEY PETROLEUM CO.'S NO. 1 RILEY AT BATSON.

The production in May, 1904, was 2000 barrels daily from 35 wells. In December, 1904, Guffey, on the Greer acre, got a 5000 barrel well, and in the first part of January, 1905, four gushers were brought in in quick succession. The largest of these was the Producers No. 4, which produced 10,000 barrels of 20 gravity oil. By June, 1905, the production was 9000 barrels daily.

Salt water proved a big factor in 1905, and many of the wells went partially to water, although they were operated after the water came in. The entire production for 1905 was 2,922,215 barrels.

In 1916 the Paggie-Regna Company got a 40 barrel well on the Tell land, about a quarter of a mile from production. This, however, caused little new activity in drilling. The production of the field on September 15, 1916, was 2260 barrels.

In the spring of 1918 the Empire Gas & Fuel Company, drilling east of production, got a 3000 barrel well in its No. 1 Nancy Fuller. This was what was known as a deep well at Saratoga, and started much drilling. The Austin Oil Company and the Texas Company both got big wells, but they did not hold up. The sand from which the production came was a very fine sand, and as the gas pressure was heavy, screens were quickly cut out and wells sanded up rapidly. This led to the invention of a screen by C. N. Scott of the Texas Company which was tried out at Saratoga and pronounced a success. Development at Hull later had the effect of putting a damper on Saratoga development, and this, coupled with salt water, caused the excitement to die down. The production at Saratoga now is around 2200 barrels a day.

BATSON

The Batson field was discovered through oil and gas seepages, the first producing well being drilled in October, 1903, by the Paraffine Oil Company of Beaumont, which later became a part of the Humble Oil & Refining Company. This first well was finished at 790 feet, and was a fair producer of 23 Beaume oil.

Within a short time after this well was completed, Guffey, Paraffine and Producers (producing subsidiary of the Texas Company) had practically the entire field under lease. As the oil was found at comparatively shallow depths, wells were finished in a hurry.

Within the next forty-five days four wells had been completed by the Paraffine and Guffey companies. Guffey and the Texas Company had laid pipe lines from the field to Saratoga, where they connected with their Sour Lake pipe lines, and Guffey had built a telegraph line through the wilderness between Batson and Saratoga.

The real excitement did not begin until December 19th, when Paraffine No. 2 came in making 6000 barrels of 30 gravity oil from 1150 feet. On December 24 the Paraffine brought in No. 3, a 15,000 barrel well, from the cap rock. This big flood of new production caused an immediate slump in prices and oil went down to 25 cents per barrel.

During the next few months Batson experienced one of the biggest booms that has been experienced in the coastal fields. Earthen storage with capacity of 3,500 to 4,000,000 barrels was constructed, and by 1904 a great part of it was filled, as up to that time the field, not yet six months old, had produced 4,000,000 barrels of oil.

After the wells began coming in, there was much danger from gas. At times the gas from the producing wells would hang like a fog just above the ground.

One Houston oil man tells the story of crawling along the ground, through the fresh air which lay between the gas and the ground, in order to escape being poisoned by the gas. Three or four good whiffs of the gas were sufficient to asphyxiate a person, unless that person got into fresh air immediately.

It finally got so bad that it was burned off as it was sepaarted from the oil.

It is said that the wild geese, confused at night by the great glare from the burning gas, would fly round and round the flame and fall to the ground at last, exhausted or even dead. One man built his house at night by the light of these great natural torches.

Famous among the early wells of Texas was the Guffey Petroleum Co.'s No. 1 Riley. This well was a man-killer, but also

(Continued on Page 93.)

Filling Stations of Southwest Combine

Beauty and Convenience

THE development of the filling station, which has kept pace in beauty of lines and practicability of service with the automobile, has evolved a new type of architecture.

Going on the theory that the owners of automobiles are lovers of the beautiful, filling station builders have begun to incorporate in their stations artistic lines which make many stations beautifiers of the sections in which they are located.

However, the builders have not stopped with making the stations merely things of beauty, but have also made them as practical as one could wish.

The filling station is a thing of the last ten years. Prior to that time gasoline was dispensed from the drug store and from the sidewalk pump. In fact, little gasoline was dispensed in the Southwest ten years ago. Now the gasoline business has become the big end of the oil marketing business and the filling station is as much a necessity as the motor car has become.

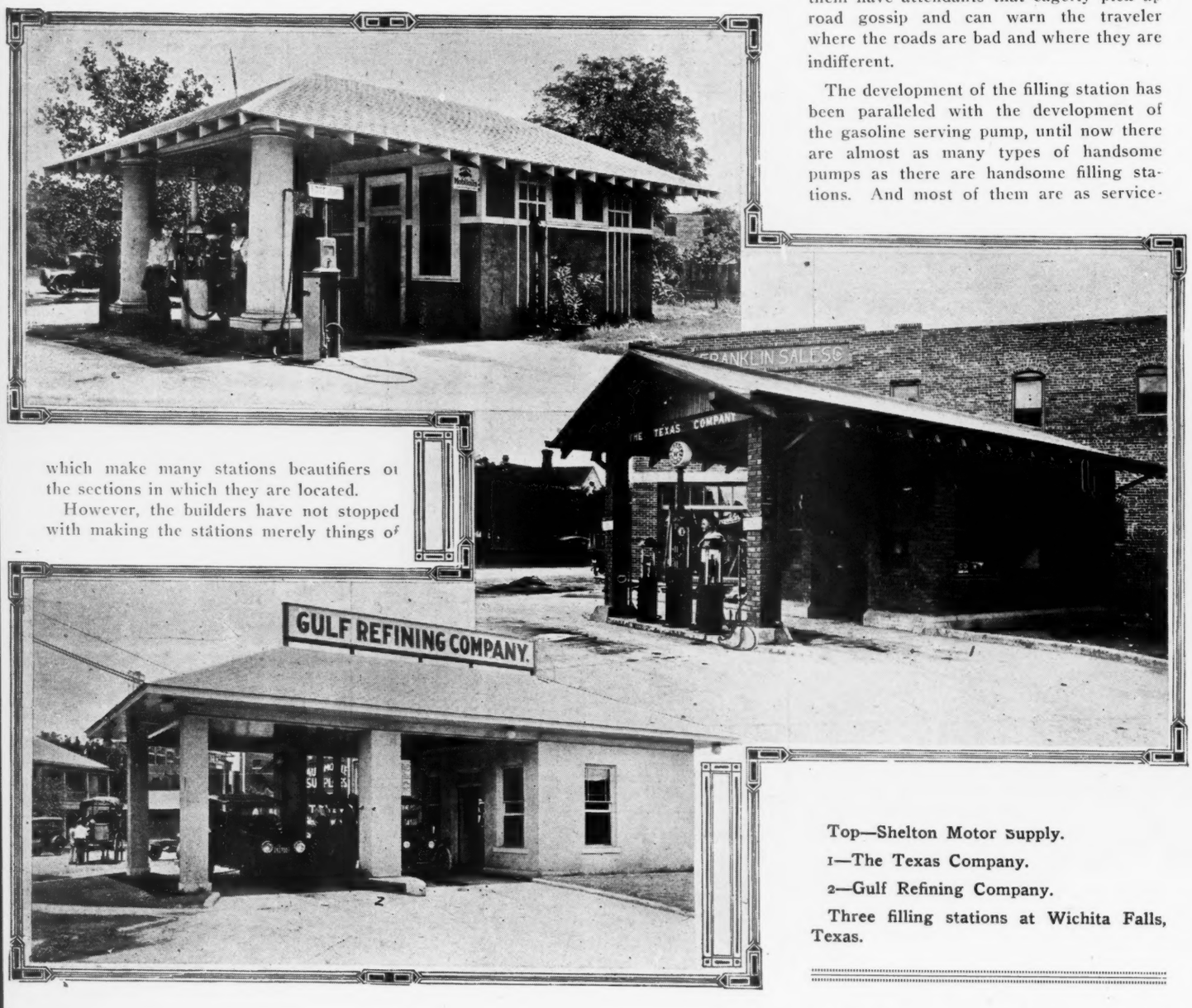
Some marketing companies still cling to the theory that they are selling gasoline, not looks, forgetting the time-old adage that, all things being equal, beauty wins out every time. Thus it is that the filling station is fast becoming the temple of gasoline, so to speak, and thousands of dollars are being spent to make them as beautiful as possible.

Easiness of entry and exit, conservation of labor in filling the tanks, rest rooms, well groomed, attentive attendants, and a genuine interest in giving the motorist full value of service, with a full gallon of gasoline or lubricating oil, now mark the filling stations of the larger companies and many of the smaller ones.

Many filling stations are prepared to supply motorists with road maps, and most of them have attendants that eagerly pick up road gossip and can warn the traveler where the roads are bad and where they are indifferent.

The development of the filling station has been paralleled with the development of the gasoline serving pump, until now there are almost as many types of handsome pumps as there are handsome filling stations. And most of them are as serviceable as are the stations in which they are located.

Herewith are shown some of the filling stations of the Southwest—stations which are an ornament to any city. These stations were picked, one might say, almost at random, wherever it was possible to secure the pictures; but the result is a fair showing of Southwestern filling stations.



Top—Shelton Motor Supply.

1—The Texas Company.

2—Gulf Refining Company.

Three filling stations at Wichita Falls, Texas.

(Continued from Page 91.)

achieved considerable reputation as an oil producer.

John H. Tucker, now superintendent of production for the Gulf Production Company, which bought out the Guffey interests, spent his first day's work in Texas on this well, although he had worked in the oil fields of West Virginia, and it is to him that The OIL WEEKLY is indebted for the accompanying picture of Riley No. 1.

When the well first came in, it made a very poisonous gas, which gas killed several people, mules, horses, dogs and chickens.

"I went to work at Batson on Riley No. 1, reaching Batson after the well had come in," said Tucker. It caught fire soon after it came in and burned for a while, and when Tucker went to work on it one of the first questions he was asked was:

"Can you rig up a swab and swab this well?" At that time he was roughnecking, but he rigged up a swab out of two joints of two-inch and some other material, and ran it in.

W. H. Halley, recently of South American fame, was on the derrick with him, acting as a kind of assistant and body guard. The gas was so bad that a man frequently was overcome, and it was necessary to carry him out. Halley was to act as an emergency ambulance in case Tucker was overcome.

Tucker ran in the swab and started up with it. The oil came with a rush. Tucker stood with his foot on the lever—he was using an old-style sand reel—and listened for the swab. By that time the oil was coming up with a roar and finally—he says it wasn't long, as time goes—he decided that the swab was out, even if he didn't hear it or see it go, so he jumped past Halley for safety.

Top — Oriental Station at Dallas. Middle, Magnolia Station at Dallas; bottom, another Magnolia station.

"As I jumped I heard a thud behind me and looking back, I saw Halley stretched out on the sill, looking as dead as a fat man could look," says Tucker. "There was a long black streak down his forehead, and between us was the two joints of two-inch used as a swab.

"'Are you dead?' I asked him.

"Halley gave a little grunting laugh and sat up. I thought sure that he had been killed."

The swab had fallen between the two men, striking Halley a glancing blow.

Riley No. 1 was 1150 feet deep, and its production has been the subject of many a discussion. However, the well put 34,000 barrels into its tanks in a 24-hour run, by actual gauge. It was commonly referred to as an 18,000 to a 23,000 barrel well.

Batson's production came from a number of sands, and also from the cap rock, which was found at about 1150 feet. The Guffey interests' No. 1 Riley was the first cap rock well.

The sands were found all the way down from 200 feet, and a very shallow and small pay was found even above that. There were a few wells which flowed around 400 feet, and several good pumpers were completed at that depth. One well pumped 1606 barrels a day at 400 feet.

The production of the field mounted steadily after the first well was finished, and at one time ran as high as 130,000 barrels a day, causing a break in the price of coastal crude from — to — cents a barrel.

Salt water entered the cap rock at Batson quicker than in any other coastal field. Wells also went into salt water more rapidly than in any other field. The water first began to show along the south line of the Knight survey, and within a short time all the wells in that vicinity had gone to water. On March 7, 1904, Brice and Bradley's well produced 12,000 barrels of oil, and on March 8 it produced nothing but salt water. This was not an unusual case, as several other wells in that part of the field went partly or entirely to water in a very short time. One effect of the encroachment of salt water was to raise the price from 25 cents to 60 cents at once.

On April 11, 1904, W. E. Brice brought in a 12,000 barrel well from a sand found at 800 feet. This well was on the Paraffine subdivision near Simms and Farish' well. There was a big rush to drill this

sand, and it is from this or shallower sands that the production of the Batson field comes now.

The production in May was about 30,000 barrels daily, and by August this had declined to 15,000 barrels. The field up to this time had produced something over 6,000,000 barrels. By the end of 1904 a 100 barrel well was considered above the average. There was nothing out of the ordinary in the way of extensions or new sands at Batson from 1906 to 1914. The field steadily declined, and while there was some new production, it was not enough to offset the natural decline in the wells. Most of the completions were small pumpers, probably the largest well in that time being one the Paraffine brought in on its 40 acres, which came in at 500 barrels.

In January, 1915, the Christian Oil Company got a 1000 barrel well in the Milhome survey, but subsequent wells failed to prove the existence of a very big pool and the attendant boom did not last long. On December 15, 1915, the production of the field was 1805 barrels. In April, 1916, two good edge wells created some excitement on the Milhome. It was not until July of the present year, however, that things really began to hum because of good wells in the Milhome survey.

AT WICHITA FALLS, TEXAS

The last boom was due to Buchanon and Fitsimmons bringing in a gusher on this tract and the Gulf Production Company getting a good well, some thirty wells were started. Results from the late deep drilling have been very disappointing. Very few good wells have been completed, and it is doubtful if any of the wells have been money-makers. That the new production was not very important is shown by the fact that on September 15, 1916, Batson only produced about 2400 barrels.

In an effort to extend the limits of the field the Paraffine Company has drilled several deep edge wells in the past and are drilling in three deep tests at present. The Producers Company has one deep test to the south of the field, and a few operators are still trying to coax gushers out of the Milhome.

CORSICANA FIELD

The Corsicana field, which, although not the first oil field in the state of Texas, may be considered the "mother field," was developed as the result of accident and bulldog tenacity on the part of a few Corsicana citizens, led by Ralph Beaton of the Corsicana Water Development Company.

In spite of difficulties in getting financial assistance, Mr. Beaton finally "put it over," and in 1895 the first car of crude petroleum was shipped from the Corsicana field, in Navarro County.

While drilling for water in 1894, the Corsicana Water Development Company drilled into an oil sand. At first the company was much chagrined at having prospects for a water well ruined by oil, and it took a lot of argument by one member of the crew who had worked in the oil fields of Pennsylvania to prevent the operators cutting off the oil and going on down for water.

Corsicana Pool Influenced Rest of State

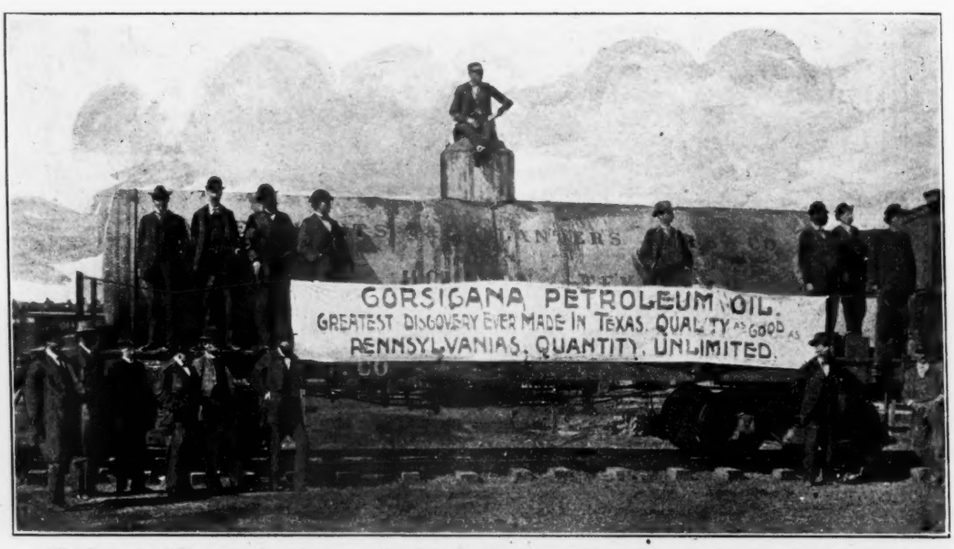
The name of this member of the crew ought to have been handed down, because the development at Corsicana had an effect on Texas oil that can hardly be fully comprehended. The fact that oil had been discovered in Texas had considerable influence on explorations in South Texas which led to the opening of Spindletop.

WESTERN OIL COMPANY'S FILLING STATION AT WICHITA FALLS, TEXAS.

The Magnolia Oil News, house organ of the Magnolia Petroleum Company, the direct descendant of the Corsicana Petroleum Company, describes Mr. Beaton's efforts to interest capital as follows:

"Enthusiasm over this find eventually began to grow and steps were taken to secure leases on considerable acreage in the vicinity of this well.

Mr. Ralph Beaton, one of the firm com-



The first car of Texas crude. It was produced in the Corsicana field in 1895. At this time the photograph was taken. Among those shown in the picture are Mr. Ralph Beaton, the late Capt. J. E. Whitselle, Mr. H. G. Damon, the late Capt. A. Angus, Mr. T. T. McCallan, Mr. Claude Jester and Mr. H. L. Scales.

Rose Grease Guns

When the jobber and dealer take on a line, and inside of the first sixty days re-order from three to four times, exceeding the initial order each time---*they are handling a live one.*

This is just what is happening among jobbers and dealers handling Rose Taper Nozzle Grease Guns. Unusual quality of product, backed by unusually effective jobber and dealer co-operation has made the Rose the leader in the field.

The *Rose Taper Nozzle Grease Guns* are made of seamless steel tubing, nozzle turned from solid screw stock having a taper fitting various sizes and openings sufficiently to prevent grease backing out as the gun is discharged. These guns fill by suction and will handle any lubricant from oil to cup grease.

Rose Shop Grease Guns, with handles, 24½x1½, all steel, list	$3.50
Rose Truck and Tractor Grease Gun, 19½x1½, all steel, list	2.50
Rose Auto Grease Gun, 12½x1¼, all steel	1.80

NOTE—The Rose Auto Grease Gun fits the opening in the fan hub of the Fordson Tractor or the opening in the differential housing of the Ford car.

The Grease Gun business belongs to the Oil Jobbers
Rose Grease Guns are sold thru Jobbers and Dealers exclusively

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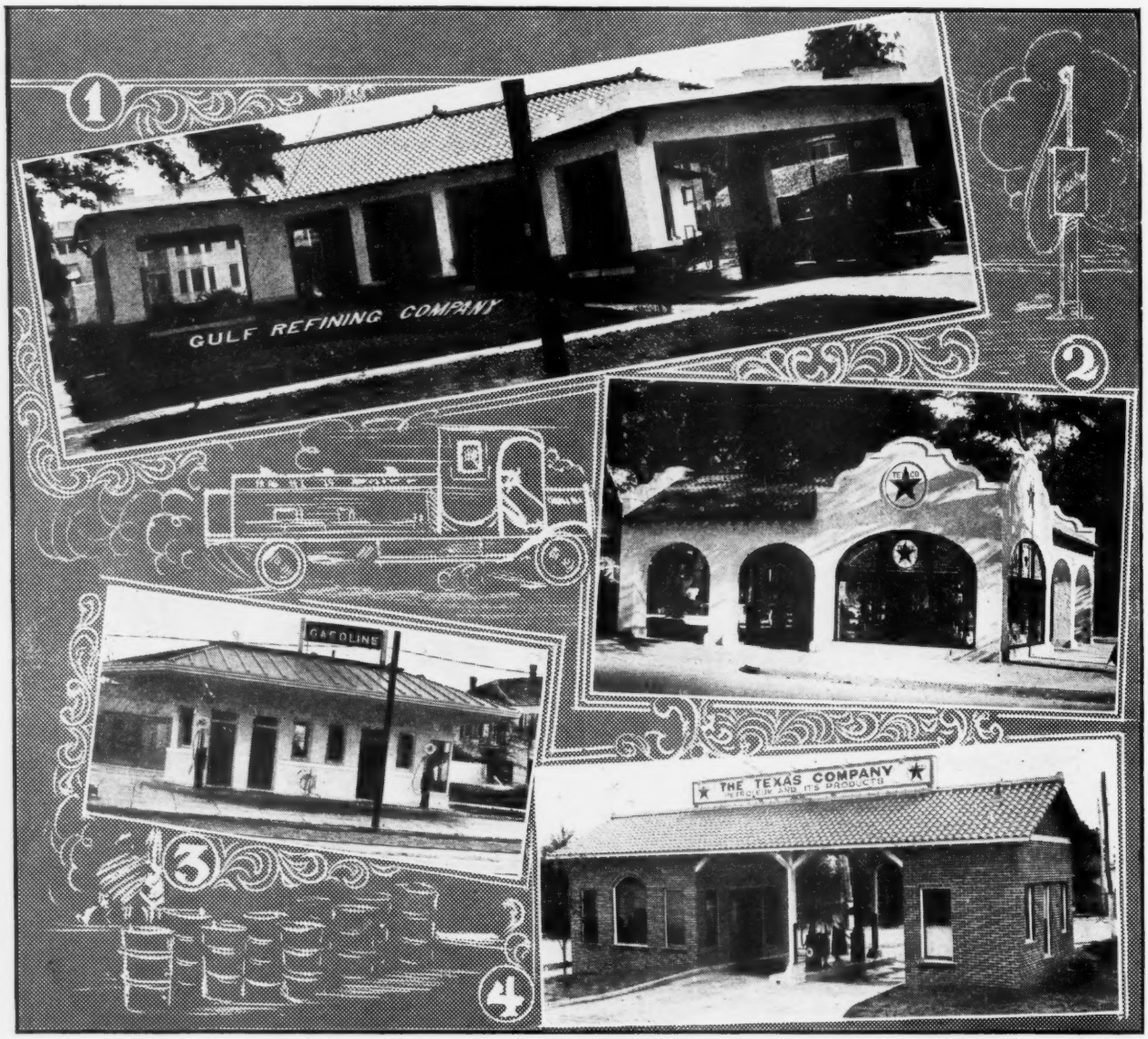


TEXAS AND GULF FILLING STATIONS AT HOUSTON.

posing the Corsicana Water Development Company, made a trip to the North for the purpose of interesting experienced oil men with capital in this new field. As Lima, Ohio, was the first oil district en route, stop was made at that point and a proposition was made to these oil men, but they would not consider it. Undaunted by this 'turn-down,' Mr. Beaton went on to Pennsylvania, stopping at Pittsburg, where he interviewed several oil men, but his proposition was again rejected. Having started from Corsicana with very small expense money, and this fund now being nearly exhausted, and not having nerve enough to wire his people for additional funds, he decided to wire them that his trip was a failure. But that strong American determination, which has brought many victories to the front, dominated.

Guffey & Galey Help

"Mr. Beaton went back to the firm of Guffey & Galey and, meeting Mr. Galey for the first time, put his proposition up to him. Mr. Galey agreed to drill three wells, provided leases on 40,000 acres were secured. A mutual agreement was arrived at and drilling was finally begun. After a time Guffey & Galey, not being satisfied with the progress made, offered a proposition to the Corsicana parties interested in the new industry to buy or sell at $30,000. The Corsicana parties, thinking well of the oil prospects in and around their city, agreed to buy.

"This sale by experienced oil men caused a depression in the value of the holdings as well as a weakness in the credit of the new company. Bankers and other men of money were approached, but they assumed a wise attitude of 'hands off.' Sheer bull dog tenacity finally won out and the value of the field was proven. It might be mentioned here that great difficulty was also experienced in getting the steam plants interested in this new but economical fuel. However, in due time this difficulty was overcome and the public has been educated to use fuel oil and this branch of the oil industry has made a wonderful growth."

THE MARKHAM FIELD

The Markham field, in Matagorda County, is one that has given flashes of great promise, and it is the belief of the oil fraternity that the main pool is yet to be discovered. So far all the oil produced in this field has been from stray sands, and there is the possibility that oil in large quantities may yet be discovered above the salt and to the side of the dome.

The physical surface of the field is a rolling prairie of black hogwallow land and extending from northeast to southwest, in the same direction as the salt has so far been encountered.

The production was first brought in in the field on June 6, 1908, when the Hardy Oil Company's No. 1 Hudson was completed at 1734 feet with an initial flow of approximately 3600 barrels. It flowed at this rate for a period of 30 days, when it began making 10 per cent water and its production gradually declined. Following the completion of this well the Hardy Oil Company drilled fifteen tests, four of which were small producers, the remainder either being junked or abandoned because of blowouts, or showd but little oil.

In December, 1908, the Producers Oil Company, now the Texas Company, leased the Hardy Oil Company's holdings on the Smith, Hudson & Myers lease, consisting of approximately 2000 acres. Four wells were drilled, two being small producers and the remainder abandoned because of blowouts.

Clem Gets Big One

In July, 1909, the tropical hurricane which destroyed the small town of Velasco swept the field, blowing away the derricks, tanks and other buildings. Following the storm the Texas Company released its leases back to the Hardy Oil Company. The Hardy Oil Company then subleased 40 acres on the Myers to the Clem Oil Company. The latter company drilled its No. 1 Myers to 1290 feet. Before the strainer could be set it blew itself in and for a few hours flowed at the rate of 15,000 barrels a day and then sanded up. When it blew in it blew 450 feet of four-inch over the top of the derrick, shattering the pipe into short pieces. At the time a strong wind was blowing and the oil which was shooting above the derrick was sprayed on the north side of the well, covering the ground for a distance of approximately three-quarters of a mile, killing all the vegetation. The ground in this section became the night bed for numerous herds of cattle, who had

discovered that owing to the oil on the ground the place was free from mosquitoes and ticks. The ground remained barren until about two years ago, when vegetation started growing. Due to the peculiar shape of the boiler which was used in drilling this well, which resembled a hearse, No. 1 Myers was dubbed "Black Maria," and is known to all oil men by that name and not as No. 1 Myers. This well was cleaned out and a strainer set and placed on the pump. It was good for 150 barrels. A year and a half later it was deepened to 1374 feet, pumping 100 barrels. Early this year it was again deepened to 1440 feet and made a 100 barrel well, and at present is pumping 15 barrels a day.

Following the completion of No. 1 Myers, the Hardy Oil Company sub-leased 40 acres on the Smith and Hudson leases to the Paystreak Oil Company, which deepened the Hardy Oil Company's No. 12 Smith in the latter part of 1910 to 1380 feet, which had an initial production of 5000 barrels. If flowed through a choker for a period of six months, making approximately 1000 barrels a day. The completion of this well caused a rush to be made to the Markham field, but the Hardy Oil Company at that time controlled most of the land, which resulted in very few companies securing leases. The Hardy Oil Company at this time drilled its No. 24 Smith, an offset to No. 12 Smith, and got a 4000 barrel well, which flowed wild for 20 days, producing 80,000 barrels of oil, and sanded up.

Eighteen Thousand Barrels a Day

The Texas Company then leased 15 acres from the Clem Oil Company and brought in its No. 1 Clem making 7200 barrels a day. This was in 1910, at which time the production of the Markham field reached the neighborhood of 18,000 barrels a day, the heaviest production being confined to four and five acre spots in the field. From this time on production from the field started to decrease. In 1912 the Hardy Oil Company, after having drilled 50 wells in the field, sub-leased the largest part of its holdings to the Texas Company.

In 1916 the next largest producer was secured by the Clem Oil Company in its No. 10 Myers, which flowed wild for a day and a half and produced 4000 barrels. It then flowed for a period of three months, making 200 barrels a day, and was placed on the pump and today is still good for ten barrels.

The gravity of the oil of the wells so far completed was around .25, and in 1917 the Texas Company drilled its No. 1 Kountz, located approximately three-quarters of a mile southwest of the field. At 3440 feet a .38 gravity oil was secured. The well flowed and pumped 50 barrels a day for several months, and was then abandoned.

Doheny in Field

In 1916, a year previous to the completion of the Texas Company's No. 1 Kountz, E. L. Doheny of California appeared in the field and drilled three wells south and southeast of the field. No. 1 Hudson encountered a good showing, started bailing, when the well blew out and the eight-inch collapsed and the test was abandoned. No. 2 Hudson, located half a mile southeast of No. 1 Hudson, was drilled to 3500 feet and had a showing of oil, but was abandoned without a test being made. His third well, No. 1 Smith, located 300 feet northwest of No. 1 Hudson, was junked at 2800 feet. After drilling to 2000 feet, Doheny conceived the idea that cable tools should be used, and in doing so made the remaining 800 feet of hole with a fishing job occurring about every three days. He then disposed of his holdings to the Texas Company, which now has 5000 acres under lease in the Markham field.

Three Wells Get Salt

Of the numerous wells drilled in this field, but three have encountered the salt. The Texas Company drilled into salt in its No. 1 Myers, drilled in 1914, at 2923 feet; and two years ago it encountered salt in its Hudson test, located three-quarters of a mile southeast of No. 1 Myers.

The Gulf Coast Oil Corporation in 1918 got salt in its No. 1 Cherry at 2700 feet. The latter test was located approximately one mile south of the Texas Company's No. 1 Myers.

Big Gas Field

The field is remarkable for the immense quantity of gas which has been encountered in nearly all of the wells drilled in this field. Thus far, however, but two gas wells have been developed. Both belonged to the Texas Company. The first gas well secured was No. 1 Gray, completed in June, 1916, and located approximately one-quarter of a mile northwest of the Texas Company's No. 1 Myers. It blew out at 2912 feet making a dry gas, and had a pressure of more than 1100 pounds. It was shut in, and produced gas for boiler firing and other purposes in the field for about two and a half years, when it sanded up. It was cleaned out and drilled to 2965 feet in June, 1919, when it blew out again and its gas was used for fuel up until about four months ago, when it stopped producing for a month or two and production again returned.

No. 6 Myers, which is down 3180 feet, was completed last month with a gas pressure of more than 1000 pounds, and its gas is being used for fuel. In the drilling of this well gas blowouts occurred at 1600 feet, 2550 feet, 3120 feet and at the present depth.

The average daily production of the Markham field is approximately 300 barrels. This production is divided between the Texas Company, the Clem Oil Company, the Eagle Petroleum Company, the Lion Oil Company and the Powhatan Oil Company, all five of which are operating in this section.

WEST COLUMBIA

West Columbia, until just a few months ago, was one of the most disappointing prospective fields on the coast. Thousands of dollars had been spent with little to show except enough blowouts and streaks of oil to tease the wildcatter into further money spending. However, the fiield made up for its "teasing" when it did come in, for some of the best wells brought in in recent years can be credited to West Columbia.

Formerly the field was known as Kiser's Mound. The first well was drilled on Kiser's Mound by the Equitable Mining Company in 1901. It was located on the Arnold 81 acre tract and at 500 feet had a large quantity of gas and water which caused its abandonment. The showings in this well were so good however that the Equitable Company started other tests immediately. The first producing well on the hill was Arnold No. 2 which had a blow out at 480 feet and afterwards produced about five barrels of heavy oil daily by natural flow for over a year.

From that time until in 1918 there were some 40 wells drilled on this proposition with little or no results. Most of the wells were shallow but several deep tests were drilled.

Owing to the fact that most of the drilling on this mound was done about ten years ago data on the old wells has been very hard to obtain.

No. 1 Equitable Mining Co. drilled to 500 feet and stopped in rock. It had a good show of oil in sand at 350 feet and it was lost because of the presence of large volumes of gas and water. No. 2 Arnold, drilled by the Equitable Mining Company, total depth 490 feet. This well blew out at 480 feet, showing heavy gas pressure and some oil. The gas caught fire and the derrick was burned. A new derrick was erected and the well drilled in. This well produced over five barrels of heavy oil per day by natural flow for over a year, but as there was no demand for the oil the well was finally abandoned.

No. 3 Arnold was drilled by Sinclair and Crosbie to a total depth 1214 feet. It had several good showings of oil but failed to make a producer.

About this time there were several wells drilled on the Arnold place and the Hogg land immediately adjoining it on the east on which I have no accurate information. On lots No. 9 and 16 of the Hogg land the Markham Oil Company drilled several shallow wells most of them obtaining good showings of oil at shallow depths. One of these wells, on lot No. 16, came in making about 50 barrels of heavy oil daily from 380 feet. A month later this was down to 20 barrels and a great deal of water was reported with the oil. This hole was finally abandoned.

Up until this time there had been little or no drilling on the Hoff land west of the Arnold place. About 1910 or '11 drilling on this place was begun and several fairly deep wells were put down by the Palacious Oil Company and the West Columbia Oil Company, also a number of shallow wells were drilled in the vicinity of the small elevation on which well serial No. 4 is located. All of the shallow wells obtained good showings and one of the deep ones had a small blow out at 2250 feet.

In the latter part of 1913 the Producers Oil Company started a test on the southern edge of the dome and drilled 10 wells in an effort to find deep pay.

In 1917 the Tyndall Wyoming Oil & Development Company completed a well which flowed a few barrels a day, at a depth reported around 2900 feet. This revived interest in the field, but many of the old times made light of the field, saying that the oil in the Tyndall well was shale oil and that it was of no significance. But when the Tyndall Company brought in its second well as a fairly good producer, business picked up. Several locations were made and early in the fall of 1918 the Texas Company drilled in a well on the Arnold which made 2,000 barrels a day.

All the larger companies, and many individuals jumped into the field with their lease men and development started in earnest. A few fairly good producers—but not large enough to keep them from being somewhat disappointing—were fininshed, and early in 1919 the Humble Oil & Refining Company opened things up by the completion of its No. 1 Giraud, on a one-acre tract. The well was reported as a 12,000 barrel well. The Texas Company then brought in a well as good as the Giraud offsetting it and the development was on in earnest. Within a comparatively short time the production was run up to 20,000 barrels a day and then to 30,000 and as high as 35,000 barrels a day.

Development was retarded somewhat by the lack of pipe line facilities. The Humble Pipe Line Company built into the field, and the Texas Pipe Line Company is now building a line. Much of the oil was stored in earthen tanks and it is estimated that at one time there was more than 2,000,000 barrels of oil in earthen storage at West Columbia.

The total production of the field to date will be found on another page of this journal.

GOOSE CREEK

The Goose Creek field is located on Goose Creek and Tabb's Bay. The producing area occupies about three square miles, extending in a crescent shape east to west.

This field is a comparatively new field, but has produced some of the biggest wells ever finished in petroleum history in Texas. The No. 16 Sweet of Simms & Company,

A TABULATED report on the principal mineral deposits of South American shows petroleum in every one of the South American countries except Chile and Paraguay, while the Central American nations every one practically are credited with petroleum deposits.

In most instances these deposits have not been developed to a degree that will show anything like their full extent, and, in fact, in several countries evidence of petroleum deposits have been sufficient to classify them as petrolific without actual production having been secured. On the other hand, however, commercial production has been developed in a large number of Central and South American countries and practically every other country in Central and South America has development under way.

Recent announcements by the government of Colombia to the effect that the oil operator in that country would have his interests safeguarded, and similar assurances, though couched in the form of promised legislation, in Venezuela, have given an impetus to development. Sad experiences of foreign capital in Mexico have retarded to some extent actual drilling in some Central and South American nations, although it has not seriously retarded the securing of leases.

The effect of Central and South American production on the oil markets of the world will not be felt for several years, possibly five or ten years, thinks W. E. Griffiths, personal representative of Henry L. Doherty, who has recently returned from an extended visit to Colombia.

The development of the automotive industry undoubtedly will seriously drain North American oil deposits during the coming ten years. Doubtless motors will be achieved which will increase power with less fuel, but the great fact that petroleum furnishes the most economical, the least dangerous, and most satisfactory engine combustive and lubricant, remains.

It is, therefore, to new fields that the petroleum industry heads are now turning. offer the best prospects—considering Mexico as a nation whose petroleum deposits are already being reckoned with.

All of the larger oil interests are seeking footholds in the Latin American nations, and, although development is necessarily slow, tremendous results already have been accomplished. Apparently recognizing that the petroleum industry has had its birth—practically—in America, and that the American has developed the hunt for oil to a science, most of these Latin American republics have welcomed the American with means.

And it is a game for those with large means, and for only those with large means. Drilling a wildcat well in Texas, even, is a work requiring considerable capital, but when it is compared with the expense of transporting rigs and men by sea, and then for hundreds of miles, in some instances, through jungles or over roads which are not of the best, the cost mounts to the point where it is no "piker's game," to use a current expression.

For the same reason that oil companies for years have camouflaged their operations in America, many of these companies operating in Latin America have been averse to publicity. Desire to get all possible before the getting was known—a business principle especially applicable to the oil industry, has caused much of the work to be veiled in secrecy.

Now that production has been secured in many places, more information is being given by those operating and the foresight of the companies now operating or securing acreage is more fully appreciated.

The information contained in the columns to come has been compiled in the face of many difficulties and from many sources. Among those sources we wish to mention "Mineral Deposits in South America," by Miller and Singewald, copyrighted 1919.

Countries referred to above as having petroleum deposits are named as follows: Argentina, Bolivia, Brazil, Colombia, Ecuador, Guianas, Peru, Uruguay and Venezoela. In these countries Argentina, Colombia, Peru and Venezuela are given as having important deposits. In Central America and the West Indies the following countries may be said to have petroleum deposits: Trinidad, Santo Domingo, Panama, Costa Rica and Cuba, with others probably, although Cuba's prospects as an oil producing country are poor.

COLOMBIA

Colombia right now is very much in the limelight as a producing and prospective producing nation. Reports that Colombia might follow the footsteps of Mexico in her attitude on the oil question have been straightened out and Colombia has made it known that the foreign investor will be protected.

Already considerable production has

been developed in this republic and a large drilling campaign—wildcatting program—is about ready to start.

The Tropical Oil Company has completed three wells 20 miles east of the Magdalena river and 400 miles from the coast. The production of these wells is estimated now at better than 10,000 barrels a day, probably more. One well is now drilling.

This company's concession embraces between two and three million acres of land, the government retaining a ten per cent royalty. It is planned to build a refinery on the Magdalena river.

The Tropical Oil Company will build a pipe line into its productive area. It is understood that the line will be 180 miles long which would indicate that it probably will extend down to the point of navigation on the Magdalena river.

The wells completed by the Tropical Oil Company are reported to have had initial production as high as 10,000 barrels a day.

A fuller discussion of this company's holdings should be found in next week's OIL WEEKLY.

The Carib Syndicate, a Royal Dutch Shell subsidiary, which also is interested in the Colombian Petroleum Company and the Colon Development Company, has big acreage in Colombia, amounting to more than 3,000,000 acres.

The Carib Syndicate is reported to have a well capped with a potential production ranging well up into the Tampico class. Some reports have placed its production as high as 100,000 barrels a day.

The Emerald Oil Company has the fee to approximately two million acres of land in Columbia. The deal was closed in Utah and the land purchased from the American Columbian Company.

As soon as the rainy season is closed geologists will inspect the land preparatory to drilling operations which it is expected to begin this winter.

A peculiarity of the land lies in the fact that it is easily accessible by water, river steamers plying on the two main river highways of Columbia.

The tract is in one piece extending from the Magdalena and Caucu rivers up to the mountains. In addition to its prospective oil and gas value the land contains more than 7 billion feet of timber. The altitude ranges from three hundred to three thousand feet. The ownership of the land has been vested in practically one family having been handed down for generations from the grant made by the King of Spain in 1636.

Under the laws of Columbia the oil and gas rights under privately owned land belongs to the individual owners, which eliminates the operator from facing troubles similar to one found in Mexico over the oil rights.

DRILLING IN BRITISH GUIANA FOR THE COLONIAL GOVERNMENT.

The Carribean district of Colombia extends from the eastern edge of the department of Magdalena to the southwest, along the coast, and inland about 50 miles, except that it runs up the Atrato river inland about 90 miles. It has been estimated that 300 square miles in this section represents good prospective acreage. The oil in this district runs from 16 to 50 degrees, Baume, but most of it runs around 23 degrees.

The Magdalena-Santander district is that which is now getting the most attention in Colombia. It embraces an area of about 200 by 100 miles, and getting into it with equipment is a difficult work. According to Miller and Singewald, who quote Arnold, the oil occurs in the Cretaceous limestones and sandstones and lower Tertiary sandstones. The favorable structures for oil accumulation are said to be well defined. A line of seepages extends along the Magdalena river flank of the eastern range to beyond the oil bearing area along the Saldana river. Indications of oil are found on the eastern slopes of the Eastern range.

Edwin B. Hopkins of Houston, geologist, representing a group of eastern bankers, will send a geological party into Colombia and Venezuela during the coming winter.

Another company getting ready to start operations is the Ohio Cities Oil Company, which has scattered leases throughout the country.

Duffy and Gillespie of Pittsburgh, Pa., with leases scattered along the Magdalena river are also getting ready to develop their holdings.

The Gulf Production Company has also entered the South American field and has holdings in Colombia near the coast and along the Magdalena river. Preparations are also under way to begin development work.

The Anglo-Persian Oil Company, with headquarters in London, Eng., has scattered holdings in Columbia, but at the present is not contemplating a drilling campaign.

Kelly of the Kelly-Kiser Company is another American in the field and has started a well on his holdings near Baranquilla and Frank Kiser is in the United States now buying machinery for a well he will also drill near Hondo.

In addition to the above mentioned companies there are many concessions under various names with scattered holdings in both countries, Colombia and Venezuela. At the present time every large company in the United States and Europe has its geologists in the field looking over prospective oil land.

VENEZUELA

"It seems that Venezuelean petroleum deposits are extensive and that they will be properly exploited in the near future," is the observation of Miller and Singewald on Venezuela.

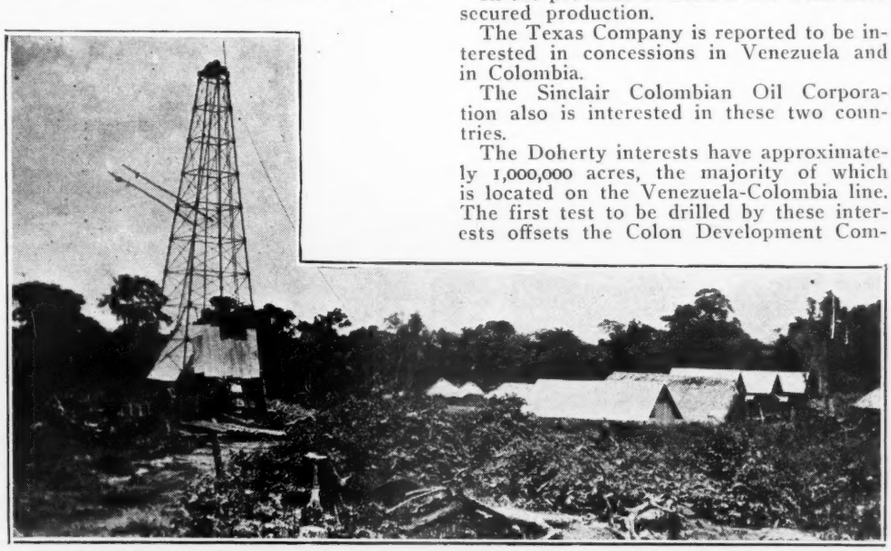
The Carribean Petroleum Syndicate is well established south of Colon where it has seven or eight wells, good for more than 10,000 barrels a day. It became interested in Venezuela in 1912, and holds acreage amounting to nearly a million and a quarter acres.

In the province of Zuila a few wells have secured production.

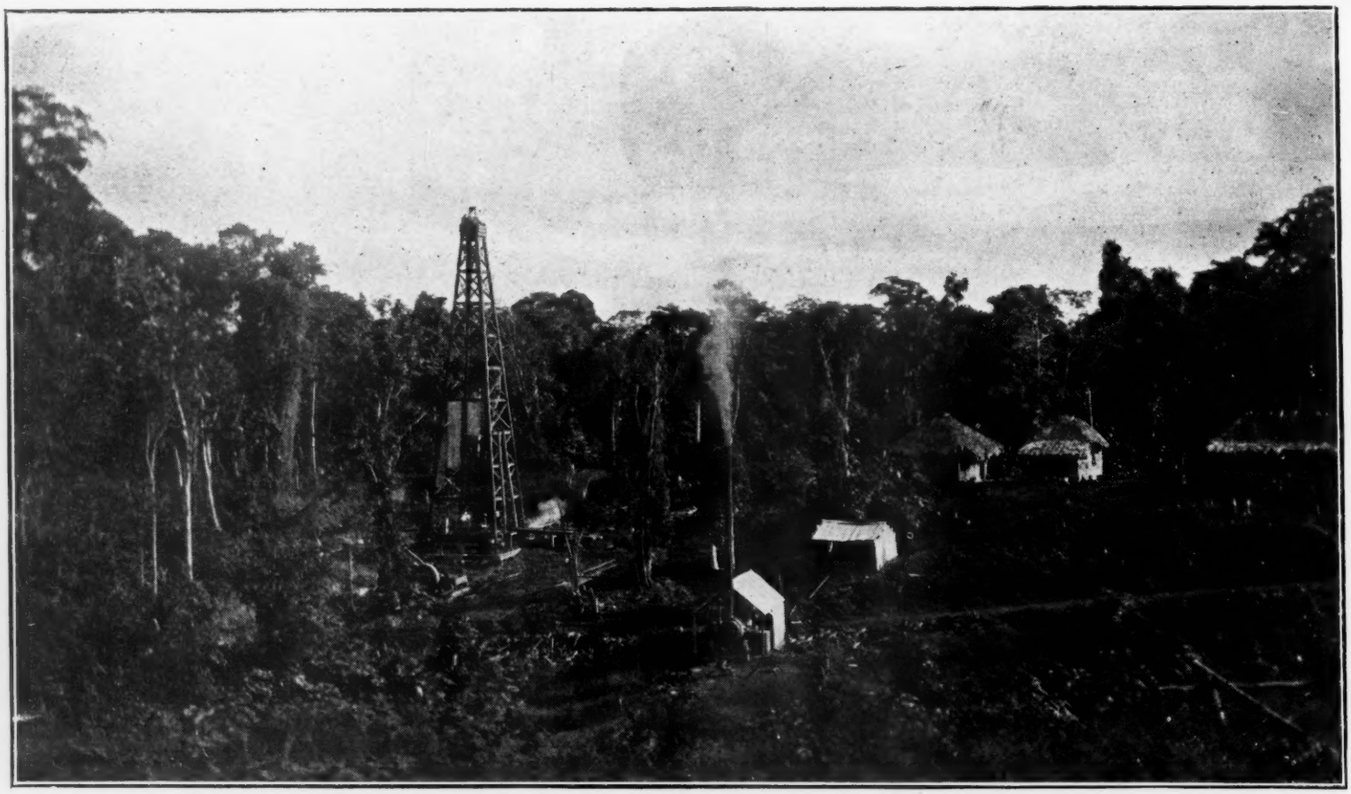
The Texas Company is reported to be interested in concessions in Venezuela and in Colombia.

The Sinclair Colombian Oil Corporation also is interested in these two countries.

The Doherty interests have approximately 1,000,000 acres, the majority of which is located on the Venezuela-Colombia line. The first test to be drilled by these interests offsets the Colon Development Com-



A SECTION OF THE CONCESSION OF MAYARO, TRINIDAD.



A TRINIDAD OIL SCENE. CONCESSION OF MAYARO.

pany's well on the north which is producing approximately 2000 barrels of .346 gravity oil with a paraffine base at a depth of 1200 feet.

The Colon Development Company also has three other wells producing approximately 1200 barrels each a day, one of which is down around 1600 feet and the other two from around 1000 feet. They are located 30 miles on the east line of the Doherty land on which the first Doherty test will be drilled. Approximately 40 miles south of the latter location is located the largest paraffine seepages in the world. The extent of these seepages is illustrated by the fact that 25 barrels have been bailed out of a single seepage in a day without decreasing the supply.

The Carribean Oil Company, supposed to be a Royal Dutch shell subsidiary, is well established south of Colon where it has seven or eight wells with a daily production of approximately 10,000 barrels.

The Venezuela Oil Company ,another Dutch Shell company, has leases scattered in Venezuela.

A. H. Mackey of Washington, D. C., also has large Venezuela holdings and is at present organizing a company to develop his leases.

COSTA RICA

The Sinclair Gulf Oil Corporation has a big concession in Costa Rica and has already started operations. The drilling is under way a considerable distance inland, near————. The company is now sending down more men to start additional work.

A party of Sinclair geologists thoroughly went over Costa Rica about two years ago and very favorable petroleum indications have been reported.

PANAMA

The Sinclair Panama Oil Corporation has started work in Panama on a large concession, and is drilling one well at the present time and expects to start another soon. Headquarters of the company are at Houston.

TRINIDAD

Trinidad has been a petroleum producing island for several years, and in addition to having production there the Dutch Shell interests have a refinery.

An interesting story is told of an effort made by the Dutch Shell interests to use a cracking process in this plant during the war with little success.

Trinidad's production goes principally to England, and only English companies are operating there.

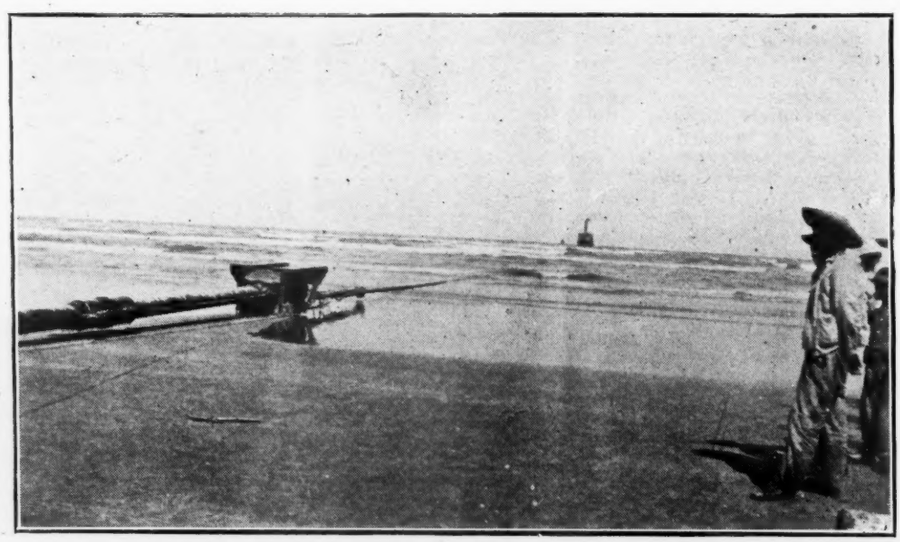
SANTO DOMINGO

Oil indications have been reported in Santo Domingo for years and it is recently reported that an American company has completed a 5000 barrel well there. The operations of this company, however, have been veiled in secrecy. The report of this 5000 barrel well has not been verified by THE OIL WEEKLY.

ARGENTINA

Four districts of Argentina, according to Miller and Singewald, may be termed as petroliferous. At best, however, the production developed thus far is not of sufficient importance to affect the fuel market in Argentina and during the war fuel oil imported from Mexico gained a hold which may be permanent. The four districts referred to above are the Comodoro Rivadivia, Salta-Jujuy, Mendoza and Caheuta in Mendoza.

The most important of these districts is



THE ATLANTIC'S LINE BEING PULLED OUT TO SEA. TAMPICO.

the Comodora-Rivadavia on the Gulf of the St. George, which, during 1917, had a total production of about 2600 barrels a day. According to Miller and Singewald, "The petroliferous horizons begin at a depth of 435 meters below sea level and continue to 620 meters ,the maximum depth that has been attained by drilling. Some wells have had an initial production of 1000 barrels a day, but the average daily yield is 50 to 100 barrels. The oil ranged 21½ to 24 Baume.

Production in the other districts has been small and the oil has been heavy, asphaltic base fluid. However, geological conditions and indications would indicate a strong possibility of finding oil in commercial quantities, according to several authorities. Development in Argentina has been comparatively slow, the government doing the work. That department carrying on the petroleum development in Argentina now has a representative in New York.

PERU

Peru may be really classed as a petroleum producing country and is the first republic in South America to have commercial production although much develment work has been done which has not been productive.

Back in 1870 the first work was done at Zorritos, where oil has been encountered at 250 feet, 400 feet and between 1500 and 1750 feet. One well has been drilled to 2902 feet but was not productive. The production of this field is around 100 barrels a day which is refined nearby. The oil tests about 38.4 degrees, Baume.

At Lobitos, where production was first found in 1901, there are more than 100 producing wells. An English company is operating in this field. Oil is found at 1500 to 2000 feet, at 2800 to 3200 feet and a new sand is believed to have been opened at 4500 feet.

In the Negritos section an American company has 480 producing wells, the most productive being around 3900 feet deep.

The Laguanitas field adjoins the Negritos field and has nearly 200 producing wells.

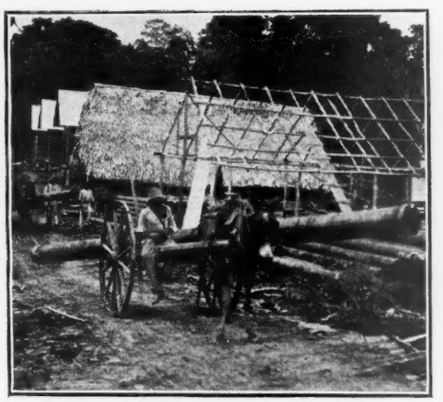
In several other sections oil has been produced in commercial quantities and petroleum indications have been found in still other sections.

THE GUIANAS

British Guiana has seen considerable drilling during the past few years. The Colonial government, drilling for water and oil also, has drilled about 40 wells, most of them located for water. This drilling was in charge of W. F. Halley & Son of Houston. In some of the wells gas was encountered, but oil in commercial quantities was not found.

Mr. Halley thinks that there are sections of British Guiana where a fair chance of locating oil may be had, and looks favorably upon one location where he drilled for the Colonial government.

Private interests have recently taken over the concessions held by the Colonial government, and will spend considerable money in drilling.



ONE WAY TO MOVE PIPE. A "MULO-TRUCK" IN TRINIDAD.

ECUADOR

Ecuador has sought to encourage petroleum development within her boundaries by passing a law which exempts petroleum and its derivatives from taxation in the province of El Oro. At San Raimondo heavy oil has been taken from shallow wells, while dug wells at Santa Paula and at Achigan help bring the total production up to some 20,000 barrels a year. One deep well was drilled in 1912 to a depth of 2000 feet, but failed to get production. The oil comes from the Eocene sandstone and big production is hardly looked for.

BRAZIL

Abundance of oil shales in Brazil has been demonstrated, but this republic has as yet developed no commercial production. However ,that section lying close to the Colombian border is looked upon as being favorable for the accumulation of petroleum and doubtless will be explored in time.

BOLIVIA

While Bolivia has no actual oil production, due possibly to lack of development, which in turn has been made difficult through the physical obstacles to be overcome in drilling a well, a belt extending along the eastern base of the Andes is looked upon as favorable to the deposit of petroleum and shallow drilling has yielded oil of high gravity. Petroleum indications are said to be numerous. So far as can be learned by THE OIL WEEKLY no petroleum development in Bolivia is under way.

GOOSE CREEK

(Continued from Page 97.)

brought in in August, 1917, was rated as high as 35,000 barrels a day. The town of Goose Creek itself originally was a small hamlet down on the bay, but when the Goose Creek Petroleum Corporation's No. 1 Gaillard blew out and covered the little town with mud and sand, the town suddenly moved. New locations for stores were made about a half mile from the field and the population grew steadily until it numbered at one time probably around 15,000 people.

Goose Creek first attracted notice as a possible oil field in 1907 when local people drilled a shallow well there. Several shallow wells were drilled and a number of pumpers were competed. But many companies lost much money by their operations at Goose Creek, and the experiences of these companies made other companies leary until last August. On August 23, 1916, Goose Creek's production was about 400 barrels per day. On August 24th Goose Creek's production was between 10,000 and 15,000 barrels per day, and Coastal oildom was in an uproar. The fact that the Producers Oil Company had sunk a quarter of a million dollars at Goose Creek even that company forgot its previous losses to the extent of paying $19,000 for acreage on the west side of the creek.

Within a short time new wells were started, new companies were organized and Goose Creek began to arrive. The Gulf Production Company, which is more heavily interested in the Goose Creek field than any other company, completed the first well after the discovery gusher, but it failed to produce. The original gusher was finished in the 2200 feet sand, perforated pipe instead o fa strainer being set. Therefore, the next few wells set strainer or perforated pipe in the 2200 feet sand, and some were fair producers. But the next biggest well was one completed in the 2600 feet sand.

For a while Goose Creek's production steadily increased until it was around 40,000 barrels per day. In fact, one day it exceeded that mark considerably, but it then started declining. Its downward sweep once carried it to 17,000 barrels per day, looked gloomy, because that week and the week before there were numerous completions and they were principally salt water wells or small pumpers.

Just when it looked like Goose Creek's production would be in the "once upon a time" class, a sand was touched at 2800 feet that produced an 8000 barrel well. Since that time productive sands have been found at 3000 feet and all the way down to 3400 feet.

The peninsula and the bay have been prolific producing territories and there is still much undrilled acreage in the bay.

The salt has never been found at Goose Creek, which is, in fact, the only Coastal producing field in which the salt has not been located.

Many operators believe that Goose Creek's greatest production is yet to come from a deeper sand than any yet touched.

HULL

Hull is a symmetrically circular hill, or dome, rising 17 feet above the surface, half of the land being covered by forest. The mound is a typical salt dome formed by the pushing up of the salt mass which comes within 600 feet of the surface in places.

The first development at Hull took place back in the early days of Spindle Top, when the theory was that the oil was to be found on top of the dome, and not along its sides. The Comet Oil Company drilled the first well there, to a depth of about 320 feet. It was located right on top of the hill. No. 2 of the Comet Oil Company was drilled nearby. Neither of them got anything.

The third well at Hull was drilled by Smith et al. on the Tarver and Wheelock tracton on top of the dome. It was drilled to a depth of 500 feet.

In 1907 the Sun Company started the exploration of the dome and completed its No. 1 on April 12, 1908. It stopped at 820 feet in salt. At 285 feet it got gyp and at 595 feet it struck the salt. It was located on the east slope of the dome not far from the top.

On April 21 the Sun Company made a location for No. 2 near the Comet Oil Company's No. 2, in front of a house now standing on top of the hill. This well was drilled to 819 feet. It got gyp at 335 feet with a little asphalt in it, and got salt at 757 feet.

In 1916, towards the first of the year, the Hull Oil Company was organized with E. L. Bradley as trustee. It was capitalized at $10,000. It made a location on the west side of the mound on the Hannah tract, and in June, 1918, was down 990 feet. It got a showing at 270 to 280 feet, a good showing at 875 feet, and a coarse sand rock from 990 to 1,000 feet. This was tested by washing. It was washed from June 27 to July 10, the drill stem being raised 400 feet. However, a heavy windstorm came up, blew down the derrick, broke off the drill stem, which fell into the well ,and it could not be fished out. About that time the Goose Creek boom started and the rig was moved away.

In 1917 the Republic Production Company became interested at Hull and drilled one well into the salt. It's No. 2 was reported as a producer, the wel labandoned

and the report denied. All of the mystery that could be attached to this well was hung on No. 3, and the fraternity was frankly puzzled as to how to play it. The story is related that one oil man was so anxious to know what really was taking place that one dark night when the Republic people were scheduled to drill it in to see what they had, he and a friend crept up close enough to hear the Republic people cussing a water well. But it later developed that it wasn't a water well.

In July, 1918, the Republic's No. 3 was completed as a 1000 barrel well and the veil of mystery was wiped away. Since that time the Republic people have drilled a number of good wells, the Big Four Oil Company ,the Texas Company and the Gulf also have completed producers. The production has been held down somewhat by lack of pipe line facilities and J. S. Cullinan's favorite axiom that oil keeps better in the ground than it does on top of it.

Since the very start the field has been the subject of litigation, much of the best acreage being tied up in suits. Some of these suits are still pending.

HOSKIN'S MOUND

While Hoskins Mound field has produced only one gusher well, this well is rather unique as the largest, shallowest well ever brought in on the American continent. In November, 1905, the Mound Oil Co. brought in its No. 2 on the Montevidoe ranch with an initial production of 3000 barrels. The well was only 582 feet deep. Before long it fell off to a production of 300 barrels of mixed oil and sulphur water and finally ceased to produce at all. The oil was 21.5 gravity (Baume).

Other producing wells have been brought in at Hoskins Mound but the field has never been considered as a real producing pool. The Texas-Company holds the lease and fee on 40,000 or more acres around and on the mound and is now working it as a sulphur prospect. It is reported that the company has opened up one of the richest sulphur propositions on the Gulf Coast in its Hoskins Mound property.

VINTON

Vinton is in Calcasieu Parish, La. The greater part of the field was owned by J. G. Gray, an extensive land holder. Active development started in 1909 when more than 26,000 barrels of oil were produced, but the gusher period did not start until 1911.

When the first lease was secured by Gardiner & Noble, of Lake Charles, La., the title to the mineral rights on all of Gray's land was claimed by Aladin Vincent. The case was not settled until May 28, 1911, when the U. S. district court upheld Gray's claims and annulled those of Vincent.

The Gardiner-Noble lease was two 40-acre tracts lying north and west on the first producing well. Afterwards they secured an option on 1200 acres lying north and east of the then proven territory. The option expired before the first well proving this territory came in and in order to hold it Gardiner & Noble were compelled to put up a large sum of money on what was practically a wildcat proposition, with nothing but surface indications to show that oil might be found there. Others in the field at the time were the Sabine Oil & Mineral Co., Gulf Refining Co., Producers Oil Co., Vinton Petroleum Co., Ninety-Nine Pumping Co. (later amalgamated with Producers) and Hooks Oil Co.

Immediately after securing the lease from Gray, Gardiner & Noble started their first well jointly with the Gulf Co., having sold the latter company a one-half interest in one of the 40-acre tracts. Others had begun drilling and the first well was brought in by the Producers and was known as the Ninety-Nine Pumping Co.'s. Although a pumper and small, it caused a great rush to the field. Several good leases were secured and large fortunes made by the more fortunate producers. The field at one time produced 15,000 barrels daily.

BARBERS HILL

Barbers Hill is located 15 miles southwest of Dayton, a few miles northeast of Goose Creek, and 26 miles east of Houston. It is near the Liberty county line.

Drilling started at Barbers Hill about the time Spindletop came into prominence. It is a typical salt dome, in fact, is a very pronounced hill or dome, which fact led to its exploitation at the time when Spindletop's phenomenal performance gave strength to the theory that oil would be found on the apex of the dome in all true salt domes. Therefore the first drilling was done on the top of the dome in 1901 by Patillo Higgins. This well was drilled to 1496 feet, stopping in salt. A test was made and a salt water well was the result. This did not deter the early operators who continued to drill on top of the hill, and by 1916 more than ten wells had been drilled. Most of these tests were necessarily comparatively shallow ones.

In 1904 Guffey drilled into gyp around 1000 feet and abandoned the hole. He continued to drill, and in one well reported a good showing of oil around 975 feet. He drilled through the cap rock in 1907, going to a depth of 1400 feet. The Sun Company drilled to the salt in 1904, going to 1350 feet. The Gulf Production Co. also drilled to salt in later years, going to a depth of 1120 feet, 500 feet of which was in salt.

Pattillo Higgins has drilled numerous wells, one of them getting a showing of oil —dead oil—at 550 feet. The oil was not in commercial quantities. Mr. Higgins still has a rig over a test at Barbers Hill and takes a new fling at this well every year.

Several deep tests have been made, the first one being drilled by Staiti et al. This well was abandoned with a bad fishing job below 1900 feet. The Gulf Production Co. drilled one well below 3000 feet at Barbers Hill. In 1916 the Gulf tested a well and it pumped several barrels of oil and much water for a considerable time, until abandoned.

In 1916 the Huston Oil Co. (Hindman et al.) got such an excellent showing in a test on the south side that land values shot upward. The well never was a producer, however. In most of the wells on the east side gas was encountered at very shallow depths.

The hill has all the indications found at domes now producing, gas seepages, etc. The formations encountered in the various wells tally with the formations found in producing fields. In one of the wells drilled a showing of sulphur was found.

According to the opinion of geologists of reputation in the gulf coast section there seems to be little chance of getting production in the sand above the cap rock on the sides and on top of the dome, and little chance of getting it in paying quantities in the cap rock itself, although it is possible that small pumpers may be finished in this cap rock. Indeed, the drill already has proven this.

The United Petroleum Co.'s No. 2 Fisher, which had a blowout in Dec. 1918, around 1196 feet and which flowed for some little time, is a cap-rock well, according to officials of the company. No. 1 Fisher of the United Petroleum Co. which was put on the beam making at various estimates 40 to 70 barrels a day, got production from a sand found at 214 feet.

No. 1 Fisher of the United Petroleum Co. is located at the base of the dome on the south side, while No. 2 is located 785 feet north of No. 1 and No. 3 will be a cap-rock well also, being located further up the dome. The community Oil Co., back in the early days, drilled to 1000 feet in a test near No. 3 of the United Petroleum Co., but did not go deep enough to get anything. On the same side of the dome is the well drilled by the Huston Petroleum Co. (Hindman et al.) in 1916. This well had an excellent showing of oil, and on the same general side of the mound, but further down its side, the Gulf Production Co. got a well which pumped several barrels before it was abandoned in 1916. The deep test of the Gulf Production Co. which was carried below 3000 feet, is off the base of the dome on the south side.

Early in 1919 Benckenstein and others of Vinton completed a well which flowed better than 300 barrels a day, possibly as much as 400 barrels a day. Since that time other fairly good wells have been completed and the production has run as high as 1000 barrels a day. It is now around 750 barrels a day. A railroad has been biult to the field and a small pipe line to Cedar Bayou will assist in taking care of the production.

BLUE RIDGE

For several years there has been more or less activity in the vicinity of Blue Ridge, Ft. Bend county, about 12 miles southwest of Houston. In 1918 the Gulf Production Company drilled into a showing of heavy oil at a comparatively shallow depth—less than 600 feet, on the Bassett Blakely prison farm, and went through this into salt. In April, 1919 the same company's No. 2 touched a sand around 2600 feet which flowed by heads for some time. Reports on the well vary but it probably made as much as 600 barrels a day. Later it was put on the pump, the gas pressure being very low. In September, 1919, the West Production Company's No. 1, about half a mile east of the Gulf's producer, reached a sand at about the same depth and, despite much trouble in getting screen set, is making better than 200 barrels a day on the pump.

RANGER FIELD IS TWO YEARS OLD

(Continuel from Page 87.)

portunity to get in on something in the Ranger field," with the result that a lot of money has been squandered by unprofessional methods and stock companies that were vastly overcapitalized. However, many companies not to be termed "major companies" have made good at Ranger.

Leases in Eastland and adjoining counties have set new high records for mineral acreage. A tract of 60 acres near Olden was sold at a time when it could hardly be said to be proven, for a cash consideration of $200,000 and a drilling agreement, with one-eighth royalty to the owner. Several scattered leases have sold at figures ranging from $3,000 to $5,000 an acre, and small tracts, school and church lots, for example, have commanded even greater prices.

The Field Defined

Defining the Ranger field in a general rough outline, it follows the T. & P. railroad from Ranger to Eastland, thence north to the Stephens County line; along this line east to a point northeast of Ranger, and back to Ranger. Although some production extends over these lines, this encloses the greater part of the proven field. It is also to be noted that not all wells drilled in this territory are productive. In some instances practically dry holes have been drilled offsetting wells of the gusher class.

What the next two years may reveal in the northern Eastland County territory, nothing but the drill can tell. There will likely be other extensions of the field, and enough wells are drilling in all parts of the county to establish whether or not there will be other producing pools.

THE Southwest is fast becoming the the natural home of the petroleum refinery and the growth of this industry in the Southwest the past twelve months has been the greatest ever experienced by any section of the country in the same length of time. During the years 1917 and 1918 numerous refineries sprang up in Oklahoma, and a number of plants have been built in that state during the past year while many of the older Oklahoma plants have been increased in capacity.

But Texas has seen the greatest growth of any state in the Southwest in recent months. The state now has 63 refineries in operation which have an approximate daily charging capacity of 344,800 barrels of crude. Eight of these plants are being increased to handle 11,600 barrels each day in addition to their present capacity, giving these plants in the next few weeks a daily capacity of 356,400 barrels.

Thirty-two refineries with a capacity of 142,300 barrels are now under construction, and when completed they will give Texas refinery capacity for running nearly a half million barrels of crude oil a day.

26 Plants Proposal.

According to plants now known, 26 additional plants are proposed for Texas and should be erected and in operation before another year rolls around. The proposed capacity of seven of these projected refineries is not known, but 19 of the plants will have a combined capacity of about 83,600 barrels a day. The completion of the 26 projected refineries will give Texas a daily refinery capacity of at least 600,000 barrels.

Probably North Texas has made the greatest strides in the number of plants erected in the past twelve months, as that section of the state now has 25 plants in operation with six more being built. One year ago but two refineries were operating in that section. Practically all of the new plants have been erected in Wichita county where the Electra and Burkburnett oil fields are located. Several new plants have been erected and other projected for Oklahoma just across Red River from the Burkburnett oil field. The Burkburnett crude is being piped across the river to the new plants to be refined and then started on the north and east trips.

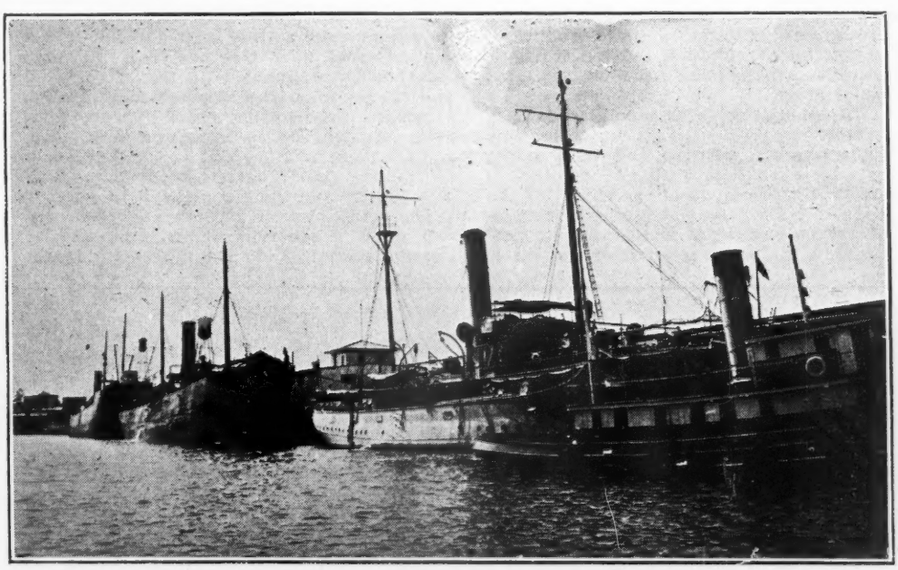
21 Plants Operating.

In Central West Texas 21 plants are in operation, 14 are now building and eight others projected. When the refineries now building are completed Central West Texas plants will have a combined daily capacity of running nearly 150,000 barrels, most of the crude coming from the Ranger and other fields in that section.

In the Gulf Coast eleven plants are in operation, some of them being the largest in the state, and five new ones are building. The daily capacity of the plants now in operation exceeds 175,000 barrels and when the refineries now under construction are completed the refining capacity of the coast section will be more than 260,000 barrels daily.

Fifteen Refineries in Louisiana.

In Louisiana 15 refineries are in operation with a combined daily capacity of close to 100,000 barrels of crude. Three of these plants are now increasing their capacity sufficiently to bring the total combined capacity close to 130,000 barrels. The Standard Oil Company plant at Baton Rouge and the Southern Oil Refining Company plant at Llaquemine are the largest in the state. At least two plants with a combined capacity of 4000 barrels a day projected and others are under consideration.



SCENE ON THE HOUSTON SHIP CHANNEL, AN INLAND DEEP WATERWAY FIFTY MILES IN LENGTH. ON ACCOUNT OF ITS ATTRACTIVENESS FOR IMPORT AND EXPORT BUSINESS, MANY REFINERIES ARE BUILDING PLANTS ON THE CHANNEL

Eleven Refineries Operating on Gulf Coast; 177,500 Bbls. a Day

ELEVEN refineries with a combined capacity of approximately 177,500 barrels are at this time operating in the Gulf Coast section of Texas, but when the five large plants now under construction are completed with an estimated capacity of 86,600 barrels a day, the daily capacity of the plants in the Gulf Coast will reach 264,100 barrels of crude. A majority of the plants in the coast section are complete plants, making practically every by-product possible to get out of crude oil.

The larger plants now are located at Beaumont and Port Arthur, but Houston and the Houston Ship Channel in a few months will be the home of refineries which will equal in size, if they do not exceed, the large plants at Port Arthur and Beaumont. The Humble Oil & Refining Company's large plant on the Houston Ship Channel is now building and will have a daily capacity of handling around 60,000 barrels of crude a day. The Sinclair Gulf Company's plant at Houston should be in operation in a few weeks and will have an ultimate daily capacity of 20,000 barrels. The Crown Oil & Refining Company plant near Houston is also nearing completion and will have a daily capacity of 5000 barrels, which will be increased from time to time.

The Empire Gas & Fuel Company has two sites on the Houston Ship Channel and it is planned to build a refinery with at least a daily capacity of 10,000 barrels some time in the future. The Invincible Oil Corporation is also planning a 5000 barrel plant on the channel. Other large refining interests either have options on sites for plants on the channel or are seeking sites.

It has been said that large financial interests are only awaiting the deepening of the Houston Ship Channel to thirty feet before erecting refineris on the channel. They will be enabled to ship their products to foreign countries and can secure the crude from Mexico, South America and other countries by boats or secure any amount of crude through pipe lines from Texas and Oklahoma fields having their terminus on the channel at Houston. Steps have been taken within the last few months to deepen the channel, and work is to start soon.

SINCLAIR PLANT READY TO START

The new plant of the Sinclair Refining Company at Sinco on the Houston Ship Channel will begin operations the next few days with a daily capacity of approximately 4000 barrels a day. At present but one unit of the stills will be charged, but the others will soon be completed and in operation, bringing the daily capacity of the plant up to 10,000 barrels a day.

The plant will use Goose Creek crude and will confine itself to the manufacturing of lubricants. It is expected that it will be close to the first of the new year before the pipe line from Ranger to the refinery will be in operation. The present plant has been so constructed that additional units can be added later as required.

Thus far approximately $3,000,000 has been expended on the plant which has been built of the best materials possible and the mechanical end of the work has been carried on with a view of making the plant the best that money and brains could devise.

At the start the company will employ approximately 200 men to operate the refinery and in addition to these, about 700 men will be required on outside work on the docks, grounds and to look after the transportation.

J. P. Gillen is general superintendent of the plant.

The refinery is situated on a tract of 713 acres with a frontage on the Houston Ship Channel of approximately one mile. At the present time the plant has a storage capacity of 500,000 barrels, of which amount 110,000 barrels is for Mexican crude which it brought to the wharf in tankers, unloaded and distributed in tank cars to the trade.

Under the consolidation of the Sinclair Companies in the Sinclair Consolidated Oil Corporation, the Sinclair Refinery will have its proportionate use of 4000 tank cars.

The company has a handsome brick office building near the refinery surrounded by attractive grounds planted with flowers and shrubbery.

Engineers are now at work laying out a town for the construction of homes for the employees, which the company will build. When completed the town will be known as Sinco, have its post office, school and stores as well as entertainment features which include an auditorium and moving picture show. At present the employees of the company are brought to and from Houston in large motor trucks provided by the company.

HUMBLE BUILDING GREAT PLANT

The Humble Oil & Refining Company has large construction crews at work on its refinery site at Bay Town on the Houston Channel near Goose Creek, the first work being preliminary to the erection of one of the four largest petroleum refining plants in the world. It is expected the first unit will be in operation next year and the plant will have an ultimate capacity of running 60,000 barrels of crude a day. Both heavy and light crude will be used.

The company now has around 23,000 barrels daily production of its own in the Coastal section and approximately 17,000 barrels daily in the light crude fields of the state. The Humble Pipe Line Company is fast building a net work of pipe lines over the state and by the time the refinery is in operation will be able to bring crude to the plant from practically every important oil center of the state.

The work receiving first attention is the building of docks, wharves, side tracks, storage and making excavations for the machinery. Work has already started on some of the buildings which will form the neuclus of an up to date and modern industrial city where the employes will have every advantage found in the larger cities.

It is expected the company will enter the export business as soon as the plant is in operation.

WORKING ON WALKER REFINERY

The Walker Oil & Refining Company has well under way the construction work on its first 1000 barrel unite of its Morgans Point refinery.

Foundations have been practically completed and material for its completion is being moved in.

The first unit will be devoted entirely to the manufacture of lubricating oils, with a total capacity of 5000 barrels perday intended for the plant when fully completed.

The company owns a twenty-five acre site at Morgans Point on the Houston Ship Channel with deep water frontage and is now building rail connection with the Southern Pacific system through the G. H. & S. A. R. R.

The Walker Oil & Refining Company is incorporated under the laws of Texas, and has as its officers, Howard Walker, president and general manager; S. C. Carnes, vice president, and W. S. McCartny, treasurer. Lee Goodson, formerly with the Pierce Oil Corporation's Texas City plant, is superintendent.

Howard Walker, president and general manager of the new company, built the Laporte Oil & Refining Company's plant at Laporte, Texas, and resigned the general managership of its operations August 1, to organize the above company.

Although the company intends shipping a great portion of its refined products by water, it will operate a fleet of tank cars for inland shipments.

HOFFMAN INCREASES CAPACITY

The Hoffman Oil & Refining Company is now increasing the capacity of its plant on the Houston Ship Channel to 1000 barrels, making it possible to run double the amount of crude heretofore used daily. The increased capacity will be in effect by the first of the year.

One 55,000 barrel steel tank is being erected to store crude oil, six 500 barrel stills are under construction and two ajutators, one 1200 barrels and the other 2400 barrels, are now being added. Two 300 horse power boilers have already been placed and are in operation.

The plant has been operating five tank cars and orders have been placed for ten additional.

A PARTIAL VIEW OF THE LAPORTE OIL & REFINING COMPANY'S PLANT AT MORGAN'S POINT ON THE HOUSTON SHIP CHANNEL. THE PRESENT CAPACITY IS 1000 BARRELS, BUT AN INCREASE IS CONTEMPLATED. A SPECIALTY IS BEING MADE OF LUBRICANTS.

Texhoma Oil & Refining Company

Producers and Refiners of

PETROLEUM

TOTAL CAPACITY: 8000 barrels of Crude daily
REFINERIES at Wichita Falls and Iowa Park, Texas
LOADING RACK FOR CRUDE: Iowa Park Texas

Benzine
Gasoline
Kerosene
Naphthas
Distillates
Fuel Oil
Lubricating Oils

General Offices: WICHITA FALLS, TEXAS

Oil Country

LINE

DRILL

PI

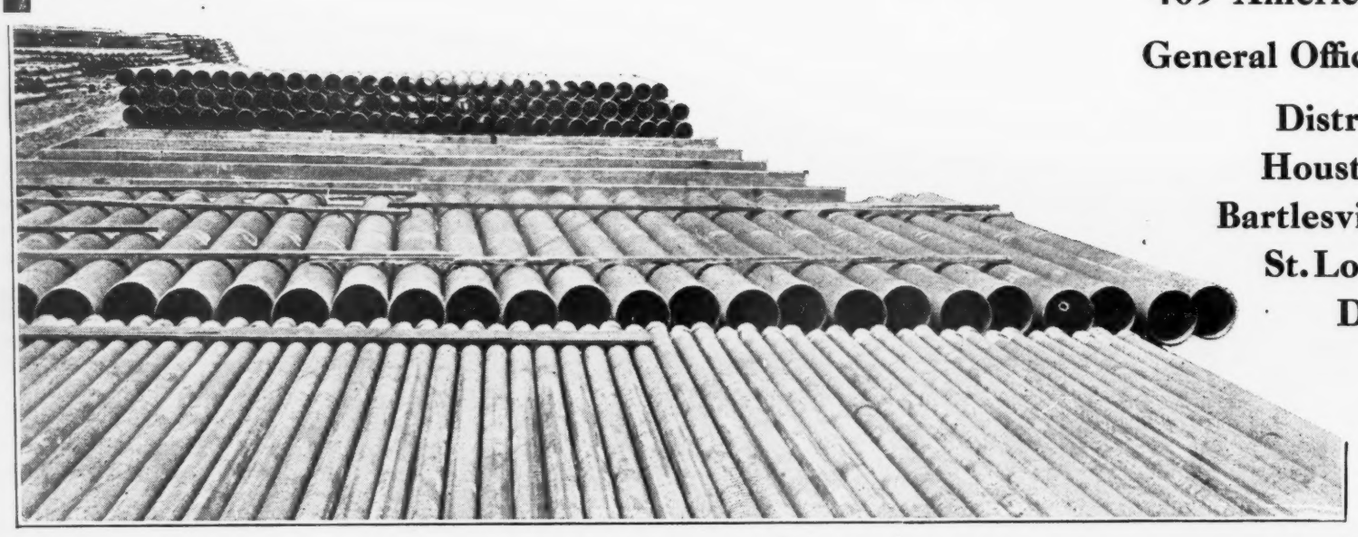
You will save much
with one of our offices
Your orders will be
specific shipping date

Interstate Pi

Texas Head
409 American

General Offices

District
Houston
Bartlesville
St. Louis
Den



Tubular Products

CASING

TUBING

PE

time by getting in touch
when you need pipe.
handled promptly and
given.

pe Company

quarters Dallas

Exchange Bldg.

Pittsburg, Pa.

Offices
Wichita Falls
Tulsa
Casper
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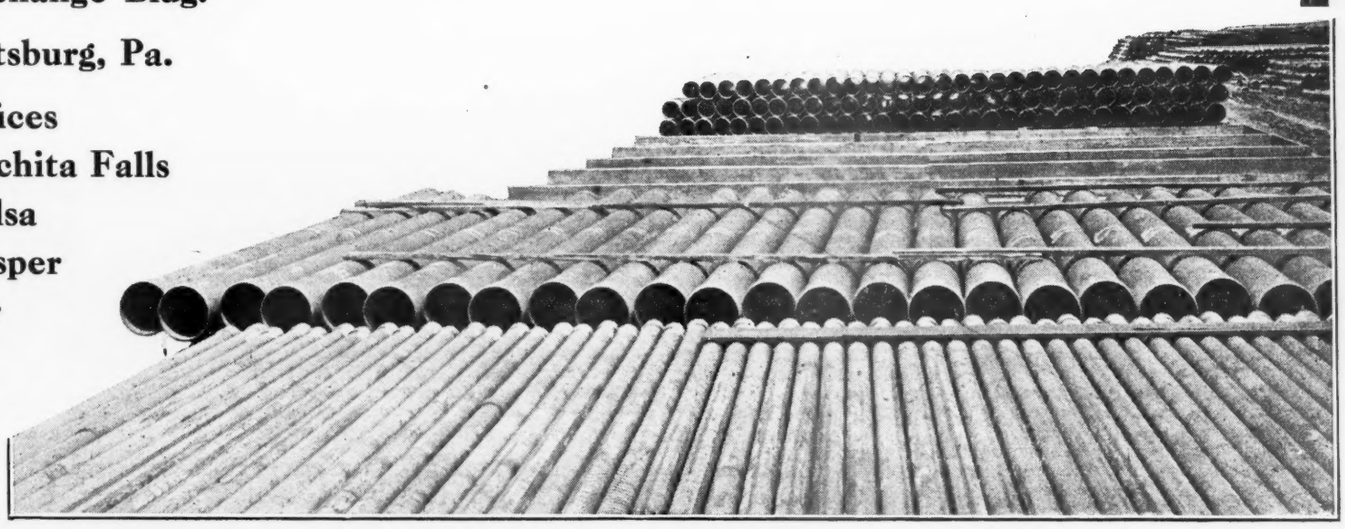

Refineries of Texas and Louisiana

OPERATING AND UNDER CONSTRUCTION

The following refineries in Texas are either operating or under construction; capacity being shown in barrels:

	Operating.	Increasing to	Building.
Texas Prod. & Ref. Co., Fort Worth	4,000	5,000	.....
Ranger Refining Co., Ranger	700	.....	.....
Ranger Oil & Ref. Co., Ranger	3,000	.....	.....
Odessa Oil & Ref. Co., Ranger	1,000	.....	.....
T-B Refining Co., Ranger	.....	.....	2,000
Duncan Oil & Ref. Co., Ranger	.....	.....	2,000
Indiahoma Ref. Co., Ranger	.....	.....	.....
Olda-Clark Ref. Co., Ranger	.....	.....	.....
Eastland Oil & Ref. Co., Eastland	3,000	.....	.....
Comanche Ref. Co., Comanche	.....	.....	1,000
Liberty Ref. Co., Cisco	1,200	3,500	.....
Deepwater Oil Refiners, Houston	.....	.....	1,000
Cartax Oil Co., Beaumont	.....	.....	.....
Walker Oil & Ref. Co., Houston	.....	.....	1,000
Gorman Home Refinery, Gorman	.....	.....	1,200
Thrall Oil Ref. Co., Thrall	400	1,000	.....
DeLeon Ref. Co., DeLeon	.....	.....	3,000
Rex Refining Co., DeLeon	.....	.....	3,000
Brownwood Ref. Co., Brownwood	500	.....	.....
Carson Ref. Co., Brownwood	500	.....	.....
Galebo Ref. Co., Brownwood	500	.....	.....
Hall Mountain Ref. Co., Brownwood	500	.....	.....
Crescent Oil Ref. Assn., Houston	.....	.....	600
Transatlantic Pet. Co., Houston	800	1,600	.....
Mary Owens Oil Co., Humble	500	1,000	.....
R. L. Fisher et al., Burkburnett	.....	.....	3,000
Republic Oil & Ref. Co., West Dallas	.....	.....	5,000
Wichita Valley Ref. Co., Iowa Park	5,000	.....	.....
New Era Ref. Co., Iowa Park	2,000	.....	.....
Beaver Electra Ref. Co., Electra	3,000	.....	.....
Waggoner Refinery, Electra	1,200	.....	.....
Oriental Oil Co., Dallas	5,000	.....	.....
Magnolia Petroleum Co., Corsicana	2,500	.....	.....
Gulf Refining Co., Fort Worth	6,000	.....	.....
Magnolia Pet. Co., Fort Worth	12,000	.....	.....
Pierce Oil Corp., Fort Worth	15,000	.....	.....
Producers Ref. Co., Gainesville	13,000	.....	.....
Hercules Pet. Co., Dallas	3,000	.....	.....
Eastland Oil & Ref. Co., Dallas	2,000	3,000	.....
Southern Oil & Ref. Assn., Fort Worth	500	.....	.....
Inland Ref. Co., Fort Worth	4,000	.....	.....
Evans-Thwing Ref. Co., Fort Worth	5,000	.....	.....
Home Oil & Ref. Co., Fort Worth	5,000	.....	.....
Federal Oil & Ref. Co., Fort Worth	.....	.....	5,000
Texas Prod. & Ref. Co., Fort Worth	.....	.....	5,000
Montrose Ref. Co., Fort Worth	.....	.....	5,000
Panther City Ref. Co., Fort Worth	.....	.....	5,000
Star Refining Co., Fort Worth	1,000	.....	.....
American Ref. Co., Wichita Falls	5,000	.....	.....
Lone Star Ref. Co., Wichita Falls	3,000	.....	.....
Texhoma Oil & Ref. Co., Wichita Falls	2,500	.....	.....
Sunshine State Oil & Ref. Co., Wichita Falls	2,500	.....	.....
Southwestern Prod. & Ref. Co., Wichita Falls	2,000	.....	.....
Power Oil Ref. Co., Wichita Falls	1,500	.....	.....
Panhandle Ref. Co., Wichita Falls	4,000	.....	.....
Dixie Ref. Co., Wichita Falls	2,000	.....	.....
Eagle Ref. Co., Wichita Falls	2,000	.....	.....
Commonwealth Ref. Co., Wichita Falls	.....	.....	1,000
Abner Davis, Trustee, Wichita Falls	.....	.....	1,000
Wichita Ranger Oil & Ref. Co., Wichita Falls	.....	.....	2,500
Holliday Ref. Co., Wichita Falls	.....	.....	1,000
New Tex Ref. Co., Wichita Falls	.....	.....	2,000
Burkburnett Ref. Co., Burkburnett	2,000	.....	.....
Interstate Ref. Co., Burkburnett	2,500	.....	.....
Interocean Ref. Co., Burkburnett	1,000	.....	.....
Crude Oil Marketing Co., Burkburnett	2,800	.....	.....
Noble Oil & Gas Co., Burkburnett	5,000	8,000	.....
Gem Refinery, Burkburnett	800	.....	.....
Security Ref. Co., Burkburnett	1,500	.....	.....
Victor Ref. Co., Burkburnett	2,000	.....	.....
Acme Ref. Co., Burkburnett	500	.....	.....
Tex Oil Ref. Co., Burkburnett	1,000	.....	.....
Golden Rod Ref. Co., Burkburnett	500	.....	.....
Travis Refinery, Burkburnett	400	.....	.....
Sabano Ref. Co., Gorman	.....	.....	.....
State Ref. Co., Dallas	.....	.....	1,500
Texas Gulf Ref. & Pipe Line Co., Abilene	.....	.....	3,000
Amarillo Pet. & Ref. Co., Amarillo	.....	.....	2,000
Eggleston Oil Ref. Co., San Antonio	1,200	1,800	.....
The Texas Co., Gates	15,000	.....	.....
The Texas Co., Port Arthur	60,000	.....	.....
The Texas Co., Port Neches	15,000	.....	.....
Lone State Oil & Ref. Co., Coleman	.....	.....	500
Weatherford Ref. Co., Weatherford	.....	.....	3,000
Sherman Ref. Co., Sherman	.....	.....	2,000
Gulf Ref. Co., Port Arthur	60,000	.....	.....
Humble Oil & Ref. Co., San Antonio	1,800	.....	.....
Magnolia Pet. Co., Beaumont	50,000	.....	.....
Galena Signal Oil Co. of Texas, Houston	3,000	.....	.....
Pierce Oil Corp., Texas City	2,500	.....	.....
Hoffman Oil & Ref. Co., Houston	500	500	.....
Seaboard Oil & Ref. Co., Orange	2,500	.....	.....
Humble Oil & Ref. Co., Houston	.....	.....	60,000
Sinclair Gulf Ref. Co., Houston	.....	.....	20,000
Crown Oil & Ref. Co., Houston	.....	.....	5,000

REFINERIES PROPOSED FOR TEXAS

Following is a list of the refineries proposed for Texas, many of them having already purchased sites and some have material en route:

*Olda Clark Ref. Co., Ranger	
Invincible Oil Corp., Houston Channel	5,000
*Consolidated Prod. & Ref. Co., Ranger	
*Harrell Pipe Line & Ref. Co., Eastland	
*International Oil Ref. Co., Ranger	
Monarch Refining Co., Gainesville	5,000
State Refining Co., Grand Prairie	1,500
Federal Oil & Refining Co., Marshall	2,000
Keene & Wolf, et al., Houston Ship Channel	1,000
Columbian Refining Co., Galveston	1,000
Hogg Creek Refining Co., Stephenville	4,000
Economy Refining Co., Wayland, (Stephens Co.)	3,000
National Refineries Co., Fort Worth	25,000
Pilot Oil & Refining Co., West Columbia	1,000
Victor Refining Co., Newcastle	2,000
Mogul Production & Refining Co., West Columbia	1,000
*Wes-Tex Production & Refining Co., Breckenridge	
Palmer Hughes, Houston	100
*Pullman Oil & Refining Co., Corsicana	
*Navarro Oil & Ref. Co., Corsicana	
Empire Gas & Fuel Co., Houston Channel	10,000
Ok-In Refining Co., Fort Worth	5,000
Federal Oil & Ref. Co., Marshall	2,000
American National Refining Co., Cisco	5,000
Panhandle Oil & Refining Co., Amarillo	2,000

*Capacity not known.

LOUISIANA REFINERIES OPERATING.

The following refineries are operating in Louisiana:

	Capacity in Bbls.	Increasing to Bbls.
*Gum Cove Oil Co., Vinton		
United Oil Refining Co., Westlake	1,000	.....
Louisiana Oil & Refining Corporation, Shreveport	3,000	6,000
Caddo Central Oil & Refining Corp., Shreveport	3,000	5,000
International Oil & Gas Corp., Shreveport	200	500
Union Refining & Pipe Line Co., Shreveport	1,200	.....
Freeport & Mexican Fuel Oil Corp., Meraux	10,000	.....
Liberty Oil Co., New Orleans	700	.....
Mexican Pet. Corp., Detrehan	10,000	.....
Pelican Oil Co., Chalmette	300	.....
Red River Ref. Co., Chrichton	700	.....
Southern Oil Ref. Co., Plaquemine	20,000	.....
Standard Oil Co., Baton Rouge	45,000	.....
Tar Island Prod. & Ref. Co., Tar Island	60	.....
Rogers Refining Co., Shreveport	1,000	.....

*Capacity not known.

PROPOSED REFINERIES FOR LOUISIANA

The following refineries are proposed for Louisiana:

Tola Prod. & Ref. Co., Minden	1,000
Union Ref. & Pipe Line Co., Homer	3,000

Sunshine State Oil & Refining Co

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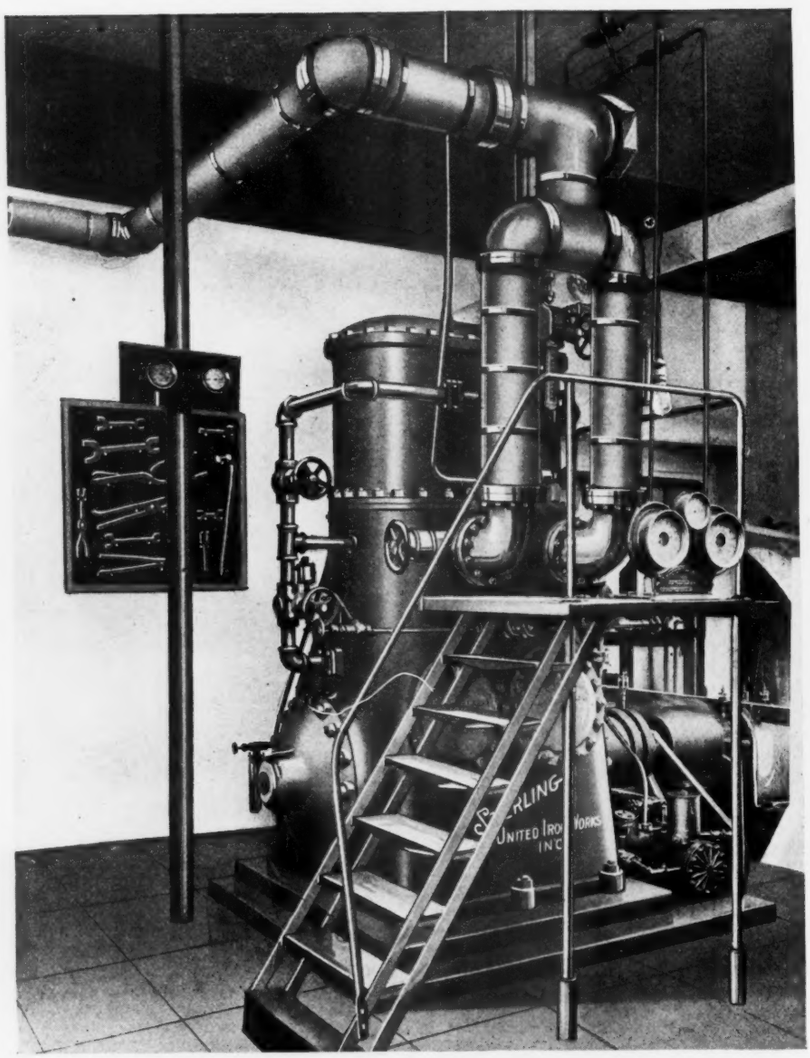

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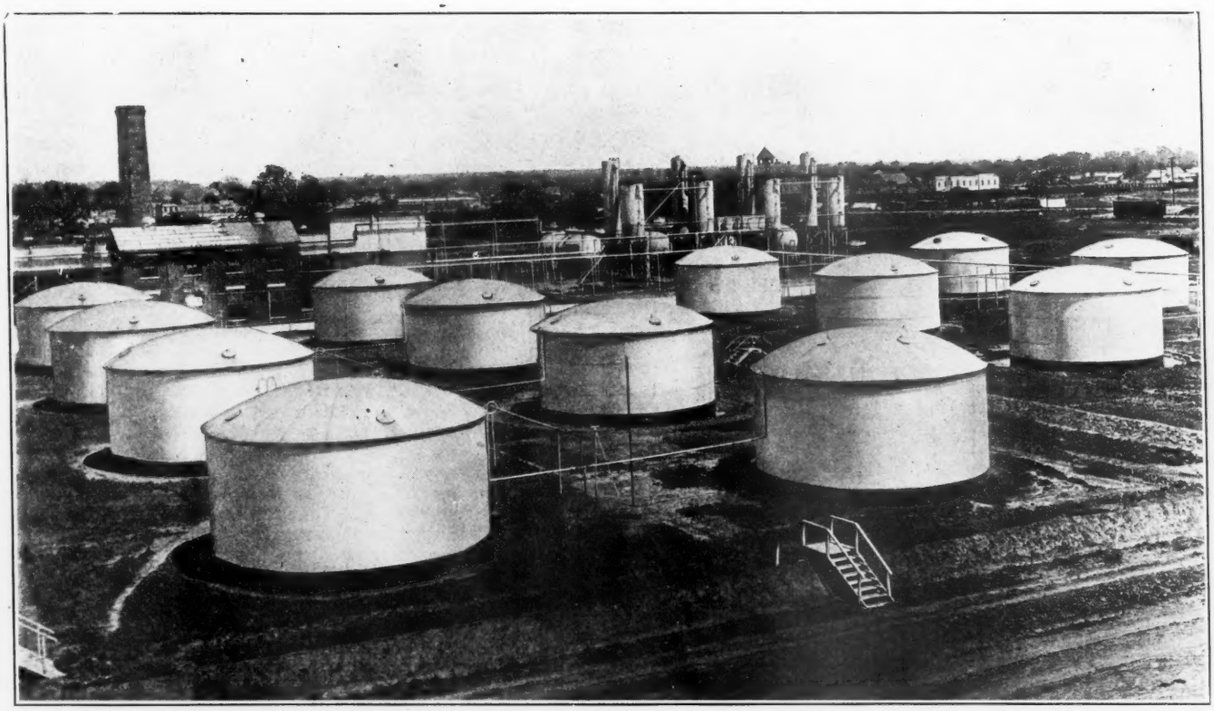

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List of Refineries in Operation, Building or Projected in Central West Texas

THE potential capacity of refineries in Central and West Texas, when all plants now under construction are completed and operating to capacity, is 146,400 barrels a day.

The potential capacity of plants already completed and operating in this same territory is 88,900 barrels daily. The actual runs from these plants at the present time is probably 25 per cent less than the potential capacity.

In the following table, the plants that are under construction are shown with their ultimate capacities, and not many of them will start operation on the amounts of oil given them in their ultimate capacities, most of them being built on the unit plan, and beginning operations as soon as the first unit is completed.

It will be seen that if all plants building or projected were completed now and running at capacity, they could take care of practically all the oil being produced in the territories where they are located, or run from the fields of Central West Texas.

It is shown by statistics that pipe line companies are taking the major portion of the production from West Texas, and running it to refining centers outside the state or to the Gulf Coast. On the other hand, some of the plants in this district are operating on oil from North Texas or from Oklahoma.

Only two or three of all the plants in Central and West Texas reduce the crude to its base, all others being skimming plants. This makes an overproduction of fuel oil locally, and this situation during the past few months, while the fuel oil market has been in the dumps, has worked a hardship on the skimming plant operators that has been almost prohibitive. Sale for first run products has remained firm, and at a figure that is profitable to refiners, in spite of adverse tariff rates on the shipment of petroleum products to interstate points. The lubricating components of West and North Texas crude make it of special value, but the fact that the refineries here are not prepared to reduce the oil to "lub" makes it impossible for them to obtain this value from it.

It has been suggested that a co-operating organization composed of all the operators of skimming plants might be formed, and a complete lubricating plant constructed, taking care of the production of each plant after the first run had been made. Such a company could pro rate its receipts on the basis of the amount of stock held by the individual members, and could build up its own sales organization, and theoretically would have an opportunity to develop into a corporation of magnitude. Its success would naturally depend upon its management, and upon the stability of the skimming plants owning its stock.

Most of the independent refineries in Central and West Texas have been financed by the sale of stock and are depending upon an open market for a supply of crude. With the production in Central West Texas in the hands of a comparatively few companies, most of them affiliated with refining companies, it is a question as to whether or not the independent skimming plant operators will be able to get a supply of crude for continuous operation.

The following table gives the names of companies having refineries in operation or under construction or projected, the location and capacity of the plants, in Central and West Texas:

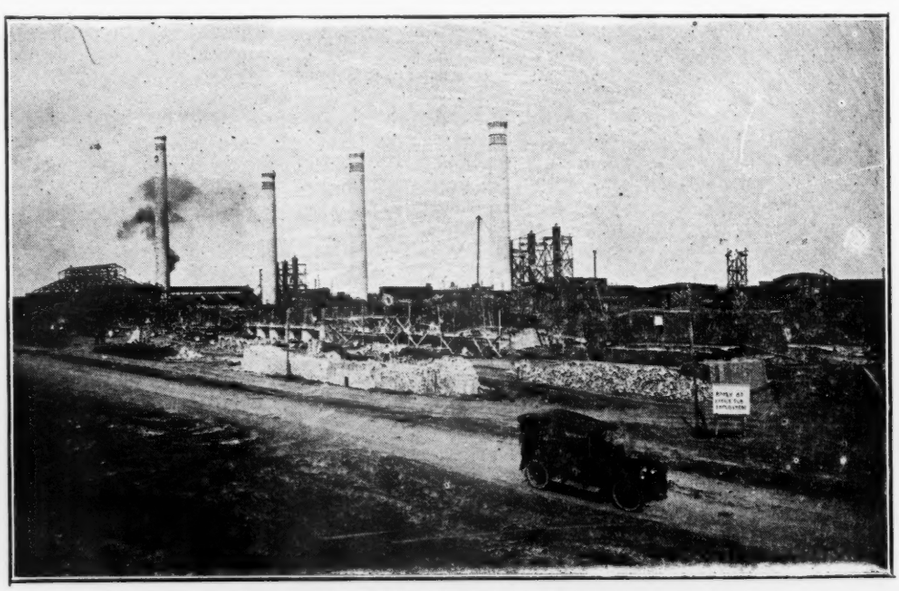
Name of Company	Location	Capacity	Status
Texas Company	Dallas	12,000	Operating
Oriental Oil Company	Dallas	5,000	Operating
Magnolia Petroleum Company	Corsicana	2,500	Operating
Gulf Refining Company	Fort Worth	6,000	Operating
Magnolia Petroleum Company	Fort Worth	12,000	Operating
Pierce Oil Corporation	Fort Worth	15,000	Operating
Producers Refining Company	Gainesville	13,000	Operating
Hercules Petroleum Company	Dallas	3,000	Operating
Eastland Oil & Refining Co.	Dallas	2,000	Operating
Southern Oil & Refining Ass'n.	Fort Worth	500	Operating
Inland Refining Company	Fort Worth	4,000	Operating
Evans-Thwing Refining Co.	Fort Worth	5,000	Building
Home Oil Refining Company	Fort Worth	5,000	Operating
Federal Oil & Refining Co.	Fort Worth	5,000	Building
Tex Producing & Refining Co.	Fort Worth	5,000	Building
Montrose Refining Company	Fort Worth	5,000	Building
Panther City Refining Co.	Fort Worth	5,000	Building
Star Refining Company	Fort Worth	1,000	Operating
Ok-In Refining Company	Fort Worth	5,000	Site bo't
Ranger Refining Company	Ranger	700	Operating
Ranger Oil & Refining Co.	Ranger	3,000	Operating
Odessa Oil & Refining Co.	Ranger	1,000	Operating
T. B. Refining Company	Ranger	2,000	Building
Duncan Oil & Refining Co.	Ranger	2,000	Building
Indiahoma Refining Company	Ranger		Building
Consolidated Prod. & Ref. Co.	Ranger		Projected
Olda Clark Refining Co.	Ranger		Projected
DeLeon Refining Company	DeLeon	3,000	Building
Rex Refining Company	DeLeon	3,000	Building
Brownwood Refining Co.	Brownwood	500	Operating
Carson Refining Company	Brownwood	500	Operating
Gotebo Refining Company	Brownwood	500	Operating
Hall Mountain Refining Co.	Brownwood	500	Operating
Gorman Home Refining Co.	Gorman		Building
Sabano Refining Company	Gorman		Building
Federal Oil & Refining Co.	Marshall	2,000	Planned
State Refining Company	Dallas	1,500	Building
A Comanche Company	Comanche	1,000	Planned
Monarch Refining Company	Gainesville	5,000	Planned
International Oil Refining Co.	Ranger		Planned
Liberty Refining Company	Cisco	1,200	Operating
American National Ref. Co.	Cisco	5,000	Planned
Texas Gulf Ref. & Pipe Line Co.	Abilene	3,000	Building

GORMAN PLANT ABOUT COMPLETED.

The Gorman Home Refinery's plant at Gorman, Texas, is to be tested out this month and when completed will have a daily capacity of about 4000 barrels. The company was organized at Gorman with a capital stock of $375,000 and most of the officers are home people. The completion of the plant has been delayed for several weeks on account of the embargoes and congestion in that section of the state. Two pipe lines, a four and a two inch, will be operated to bring the crude oil to the plant and practically all of the pipe is on hand for these lines. The company has the following officers: J. T. Neill, president; J. M. Thomas, vice president and general manager; F. S. Perry, secretary; I. C. Underwood, treasurer; W. A. Hickey, general superintendent, and S. F. Holmes, auditor.

PLAN ANOTHER REFINERY FOR AMARILLO

The Panhandle Oil & Refining Company, with a capital stock of $240,000, has been formed by citizens at Amarillo and a site has been secured with proper trackage in the city, where a refining plant will be erected, work to start within sixty days. The officers are: E. A. Haynes, president; J. D. Cole, vice president; W. B. Patterson, secretary, and J. W. Collins, treasurer.



HOME OIL & REFINING COMPANY, ON THE FRISCO TRACKS SOUTHWEST OF FORT WORTH, ON THE SUMMIT AVENUE CAR LINE

Twenty-five Refineries Are Operating in Wichita County

THE first week in October, this year, there were 25 refineries operating in Wichita County, Texas, all making use of the crude from the oil fields at Burkburnett, Iowa Park and Electra, with a maximum average daily capacity for running 55,700 barrels of crude oil. At the end of the year the six plants now in course of construction will be in operation, making the aggregate daily capacity of the plants in Wichita County 66,200 barrels of crude.

This summer the Wichita Valley Refining Company's plant at Iowa Park was sold to the Texhoma Oil & Refining Company for $1,000,000. The purchased plant has a capacity of 5000 barrels of crude a day, and if this basis is taken for figuring the value of the plants in operation, the large aggregate of approximately $11,000,000 is reached on October 1, and this aggregate will be increased to about $13,000,000 by the first of the year. It is true that some of the plants cost more than this, but it is also true that some of the other plants were erected at a smaller cost. But taken all in all, the average should work out, since anything is worth what it can be sold for. Since these plants are assured of plenty of crude for a long time from the present proven fields of the county, it is hardly doubted that the value will decrease in the near future; but rather the amount invested in refineries in Wichita County will most likely increase in the next few years, as other plants are proposed at this time.

Oklahoma Plants Not Considered

In discussing the plants in Wichita County, those being built and being operated in Oklahoma, just across the Red River from the Burkburnett oil fields, are not taken into consideration, as they are located in another state; but it must be remembered that they are dependent upon the Wichita County crude and that they are connected with these fields with pipe lines. It is likely that ten to fifteen refining plants will be located and operating within fifty miles of the Burkburnett fields in Oklahoma by the end of the year. Early in September the oil fields of Wichita County were averaging around 125,000 barrels of oil a day, but this will likely be decreased by the first of the year, unless new fields are proven by that time.

Most of the refineries now operating in Wichita County have been erected during the past twelve months, only two being operated in the county late last summer. The discovery of abundant oil at the 1600-1700 foot depth in the town of Burkburnett last July and August brought about an era of refinery building. The proving of the Northwest Burkburnett field, northwest of Burkburnett, more than five times greater in area than the Burkburnett pool, caused others to see the field for still more plants for the refining of the crude product.

No Complete Plants

No plant in Wichita County is making greases, wax, etc., from the high gravity crude, although it is expected that some of the present plants within a few months will be added to so that they can take other by-products from the crude oil. At this time only gasoline, kerosene, gas oil, naptha, distillate and fuel oil are made, and it is estimated that approximately 5 per cent of the crude is a loss in the refining operation, although some of the better plants are losing only about 3 per cent. Some of the better equipped refineries are securing as high as 40 per cent of gasoline, 12 per cent of kerosene and 45 per cent of fuel oil. The more common average probably would be 30 per cent gasoline, 10 per cent kerosene and 55 per cent fuel oil, as few of the plants are only making colored gasoline and fuel oil. The larger and better equipped plants would make nearer the first average named.

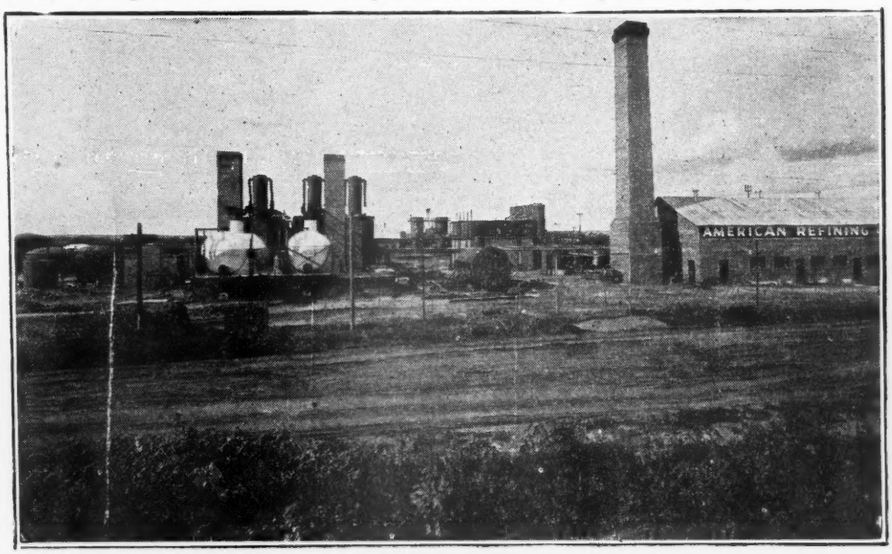
Tank Car Situation Slows Work

As congested conditions have existed on the railroads serving the Wichita Falls district since the proving of the Northwest field, and even before, it is doubted if the refineries in operation have operated nearer than 75 per cent capacity and will hardly operate full capacity before the end of the year. They cannot secure empty tank cars as needed, and neither can they secure prompt movement of the cars after they have been loaded with the various products. Every refinery operating in Wichita County has always been able to sell more of its product than it could possibly get moved by the railroads. Early in August most of the plants were forced to close down part of the time, as they had all storage filled with products ready for the purchasers and practically nothing was moving for a time over the railroads. The situation began to show an improvement around the middle of August, and should continue to show marked improvement, as the end of the year should see ample railroad facilities for handling all business offered.

Fuel Oil Is Profit

Many refiners will say that the sale of the fuel oil represents their profit. If this is true, the refiners of Wichita Falls district are showing a monthly profit of around $1,000,000. This estimate is reached by figuring that the refineries are operating 75 per cent capacity and have for sale each day 22,000 barrels of fuel oil, priced for the purpose of securing these figures at $1.50 a barrel, which is higher than the ruling price in July and August. It is estimated that 10 per cent of the crude run is made into fuel oil.

With a maximum capacity of 55,700 barrels a day, the refineries of the district are actually averaging close to 40,000 barrels a day, or 1,680,000 gallons. If only 30 per cent as an average is secured in gasoline, that means 504,000 gallons every 24 hours,



AMERICAN REFINING COMPANY, WICHITA FALLS, TEXAS

The Beaver-Electra Refining Company's Plant, shown above, is now being added to and a pipe line is being built to the Northwest Burkburnett field. The company operates its own tank cars and has a good water supply, so necessary to refineries in North Texas. Much Electra crude has been used in the past by this plant.

Refineries Attracted to Louisiana Account of the Growth of Oil Fields

With the wonderful growth of the Shreveport oil fields comes the demand for refineries and more refineries in North Louisiana, and phenomenal progress has been made along these lines during the past year, only limited by the difficulty in securing materials.

The Caddo Oil & Refining Company's plant at Cedar Grove was sold during the year to the Caddo Central Oil & Refining Company, and its capacity enlarged from 2000 to 3000 barrels a day by the completion of three new stills. C. P. Clayton, former manager of the Texas Company, of Louisiana, is now manager of the Caddo Central Oil & Refining Company. A complete new plant is in process of construction near the site of the old plant, the first unit of which will have a capacity of 2000 barrels and which will eventually be enlarged to at least 5000 barrels. The Leonard Construction Company, which has been awarded the contract for building the new refinery, has established temporary offices in the Commercial Bank Building, in charge of J. C. Ward, but as soon as the tracks, now being laid by the Kansas City Southern Railway, are completed, office buildings will be built on the grounds and a big force of men will be put on the work to completion.

Operates Casinghead Plant

The Caddo Central Oil & Refining Company has 85 producing wells in the North Louisiana field, and owns about 35,000 acres in fee and 7,000 acres of valuable leases. It owns 300 tank cars, with 85 miles of pipe line serving the Caddo, Crichton and Bull Bayou fields, and owns and operates a casinghead gasoline plant at Mooringsport.

The Louisiana Oil Refining Corporation has a 3000 barrel refinery located at Gas Center, just north of Shreveport, on the Kansas City Southern Railway, equipped with all facilities for making gasoline, kerosene, naphtha and fuel oil, and plans have been perfected for the construction of a new plant which will double this capacity within the next three months. The Louisiana has about 100 miles of 4-inch line serving the Caddo and Red River fields, and is building a 6-inch line from Homer, in the new Claiborne oil field, to Shreveport, which will be completed and in operation within the next 30 days.

To Enlarge Pine Island Plant

The Pine Island Refining Company's plant at Cedar Grove has been purchased recently by the International Oil & Gas Corporation, which expects to increase its present capacity of 200 barrels to 500 barrels a day by January first. The plant is situated at Cedar Grove, along the line of the Kansas City Southern Railway.

One of the immediate results of the situation in which the Pine Island operators were placed by the refusal of the pipe line companies to handle oil from this territory, was the organization of the Superior Oil Works with a capitalization of $300,000, for the specific purpose of building a refinery to take care of the oil from this district. George Todd of Oklahoma City is president of the company, and has charge of the construction of the plant, work on which has been greatly handicapped by the difficulty in securing materials. The plant is located just south of Vivian, on the Kansas City Southern Railway, on a 125 acre site, and will start off with a 1500 barrel unit, to be enlarged as fast as building can be accomplished. The laboratory and offices have been completed and most of the brick work is ready for the steel when it arrives. D. C. Richardson is treasurer of the Superior Oil Works, and Harley Todd secretary and manager.

To Run Pine Island Crude

The Union Refining & Pipe Line Company, which took over the Union Refining Company's 300 barrel plant at Oil City some months ago, has been enlarged to a capacity of 1200 barrels and is ready to run oil from the Pine Island field. The company has recently acquired 200 tank cars with which it will handle its own products, and is equipped to take care of both light and heavy oil. The Union Refining & Pipe Line Company also contemplates the construction of a 3000 barrel plant at Homer, and is building a pipe line from the Claiborne field with that end in view.

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and if the value of 18 cents is used, the returns from gasoline for the plants in Wichita County is $90,720 a day. Naturally this figure would be greater if the higher average made by some of the larger plants was used. If only 10 per cent of kerosene is secured, that means 168,000 gallons a day, worth $15,120 if sold at 9 cents a gallon. The railroad congestion during the summer caused the price of fuel oil to drop from 65 to 95 cents a barrel in some instances, although some of the plants have been able to dispose of their fuel at a much better price. This was particularly true of the plants operating at Burkburnett, so near the oil fields, where a large amount of fuel is used during the drilling operations. The estimates mentioned here do not take into consideration the returns received by some of the plants making other products.

To Build Complete Plants

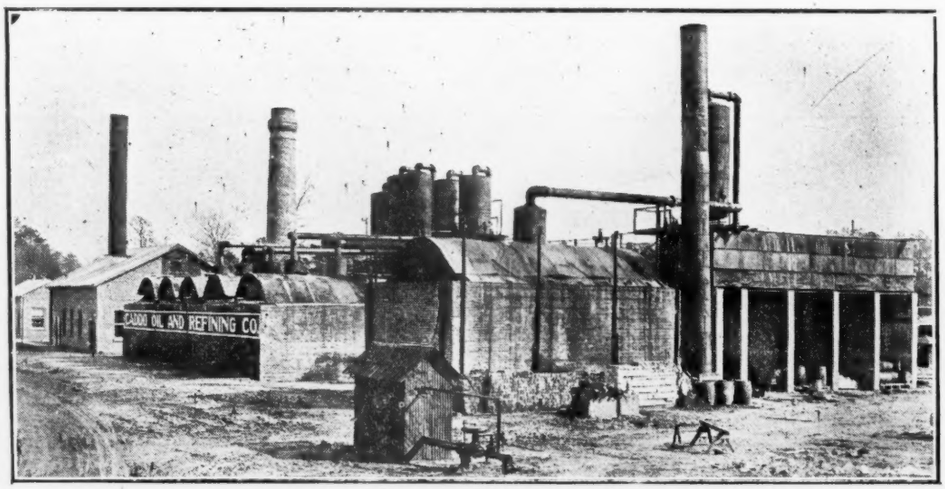
It is generally understood that two or three of the better equipped refineries of the county are making plans for equipping their plants to make other products, not now built to make these finer products. The Burkburnett crude is a prime favorite with the refineries of Texas and Oklahoma plants on account of the high gasoline content. A cut of 38 per cent gasoline is not unusual by any means, and a number of test runs have reached the average of 40 per cent and even a fraction better. As high as 15 per cent kerosene has also been obtained in test runs, two or three of the larger plants securing around 12 per cent kerosene most of the time.

Must Treat Water

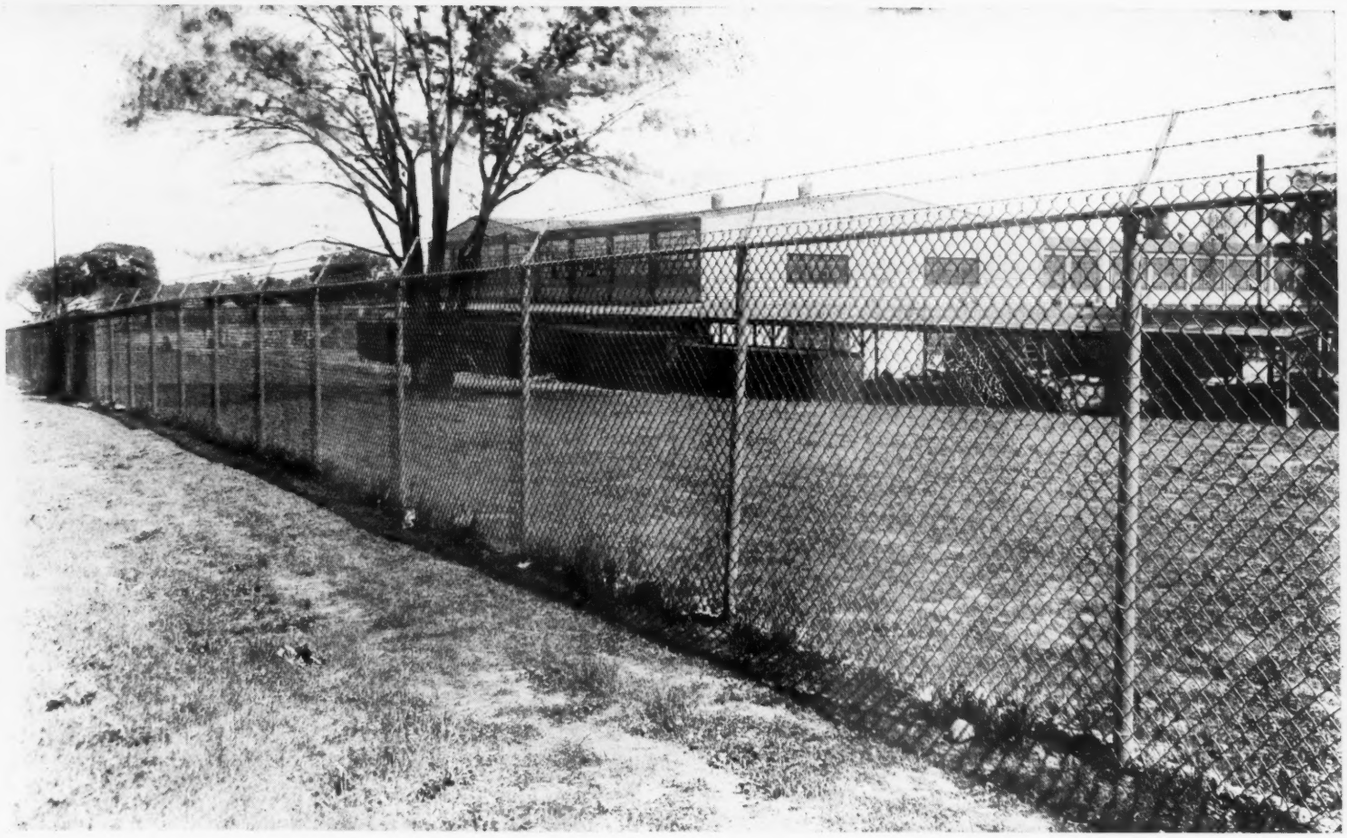
The refineries in the Wichita Falls district have some trouble with their water supply, most of them depending upon shallow wells. In most instances the water has to be treated, and the promoter of a refinery looks into the water problem as one of the first matters to be settled. The plants are located convenient to a railroad. All have loading racks and switches, and practically all either own tank cars or have the cars leased.

Following is a list of the refineries operating and under construction in Wichita County, the maximum capacity being given:

Wichita Falls—Operating	Bbls. Daily
American Refining Company	5000
Lone Star Refining Company	3000
Texhoma Oil & Refining Company	2500
Sunshine State Oil & Refining Co.	2500
Southwestern Producing & Ref. Co.	2000
Power Oil Refining Company	1500
Panhandle Refining Company	4000
Dixie Refining Company	2000
Eagle Refining Company	2000
Wichita Falls—Under Construction	
Commonwealth Refining Company	1000
Abner Davis, Trustee, Refinery	1000
Wichita Ranger Oil & Refining Co.	2500
Holliday Refining Company	1000
New Tex Refining Company	2000
Burkburnett—Operating	
Burkburnett Refining Company	2000
Interstate Refining Company	2500
Inter Ocean Refining Company	1000
Crude Oil Marketing Company	2800
Chas. F. Noble Oil & Gas Co.	5000
Gem Refinery	800
Security Refining Company	1500
Victor Refining Company	2000
Acme Refining Company	500
Texoil Refining Company	1000
Golden Rod Refining Company	500
Travis Refinery	400
Burkburnett—Building	
R. L. Fisher et al	3000
Iowa Park—Operating	
Wichita Valley Refining Company	5000
New Era Refining Company	2000
Electra—Operating	
Beaver Electra Refining Company	3000
Waggoner Refinery	1200



CADDO OIL & REFINING COMPANY'S PLANT AT SHREVEPORT, LA.



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Better protection for plants is one of the necessities the war emphasized. For this purpose, Page Wire-Link Fabric proved superior.

Permanent, handsome and super-serviceable, it enhances the value of the property. And it provides protection from thieves or other unauthorized intruders.

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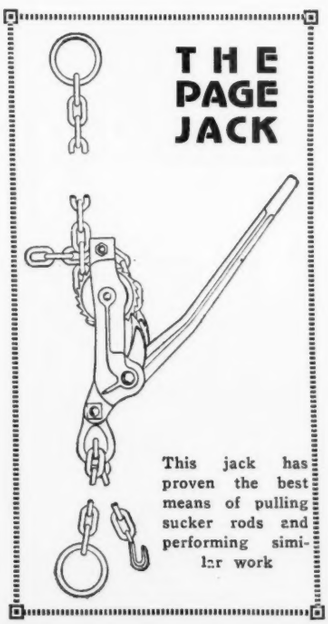
WIRE-LINK FABRIC

For Partitions and Enclosures, Too

Page Wire-Link Fabric has come into wide use for interior partitions and departmental enclosure.

Absolutely fireproof and vermin-proof, it does not obstruct light or ventilation, and is very economical of space.

Consult our engineering department at Adrian. It will gladly advise you as to how Wire-Link Fabric can serve you.



This jack has proven the best means of pulling sucker rods and performing similar work

PAGE STEEL and WIRE COMPANY

Formerly Page Woven Wire Fence Company

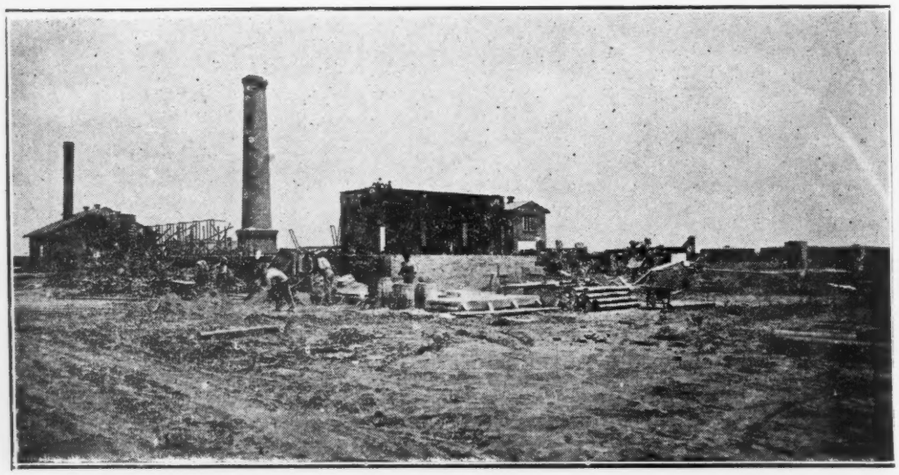
Established 1883

Factories: Adrian, Michigan; Monessen, Pennsylvania

Branches: New York, 30 Church Street; Pittsburgh, 644 Union Arcade; Detroit, 1147 Book Bldg.; Cricago, 29 South La Salle St.

STEEL AND WIRE
PAGE
QUALITY PRODUCTS

(Trade Mark)



INVINCIBLE REFINERY, NORTH OF TOWN, ONE AND A HALF MILES MILES FROM THE STOCK YARDS AT FORT WORTH

EMPIRE TO BUILD ON SHIP CHANNEL.

The Empire Gas & Fuel Company has secured two sites on the Houston Ship Channel through purchase and plans call for a refinery at a later date with a capacity of at least 10,000 barrels of crude a day. The larger of the sites on the channel consists of 972 acres and has a deep water frontage of about 2000 feet. The other site has a frontage on the channel of about 1500 feet and is close to 25 acres. The company purchased these sites prior to the time the United States entered the war and conditions since have been such that the officiels decided to wait for nearer normal times before beginning actual construction work. It is expected that Tampico crude will largely be used.

The company recently began work on a refinery at New Orleans where deep water is available. The New Orleans plant will make asphalt in addition to other products and Tampico crude is to be used. The Empire is gradually securing considerable production of its own in Texas and is operating in North and Central West Texas, in addition to running around 100 strings of tools in Oklahoma and Kansas. The company has extensive holdings in some of the Texas coastal fields and operations are likely in the near future.

CISCO PLANT INCREASING CAPACITY

The Cisco Refining Company began operation of its plant one year ago with a daily capacity of 1350 barrels of crude, but additional equipment is now being installed to increase the capacity to about 3500 barrels. The added equipment will be in operation by December 1. The plant is getting its crude from the Ranger and Desdemona fields, the crude being delivered by the Steiner Oil Company on a three-year contract.

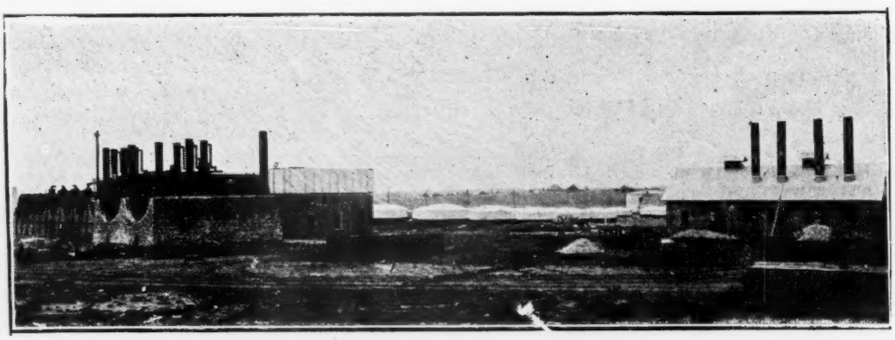
The company now has in use 85 tank cars, and expects to be operating close to 200 next year. The plant site consists of sixteen acres, ample storage is at hand, and the products include gasoline, naphtha, kerosene, distillates, gas oil and fuel oil. One of the features of the plant is the seven-foot non-climbable cycle fence.

EGGLESTON REFINERY IS EXPANDING

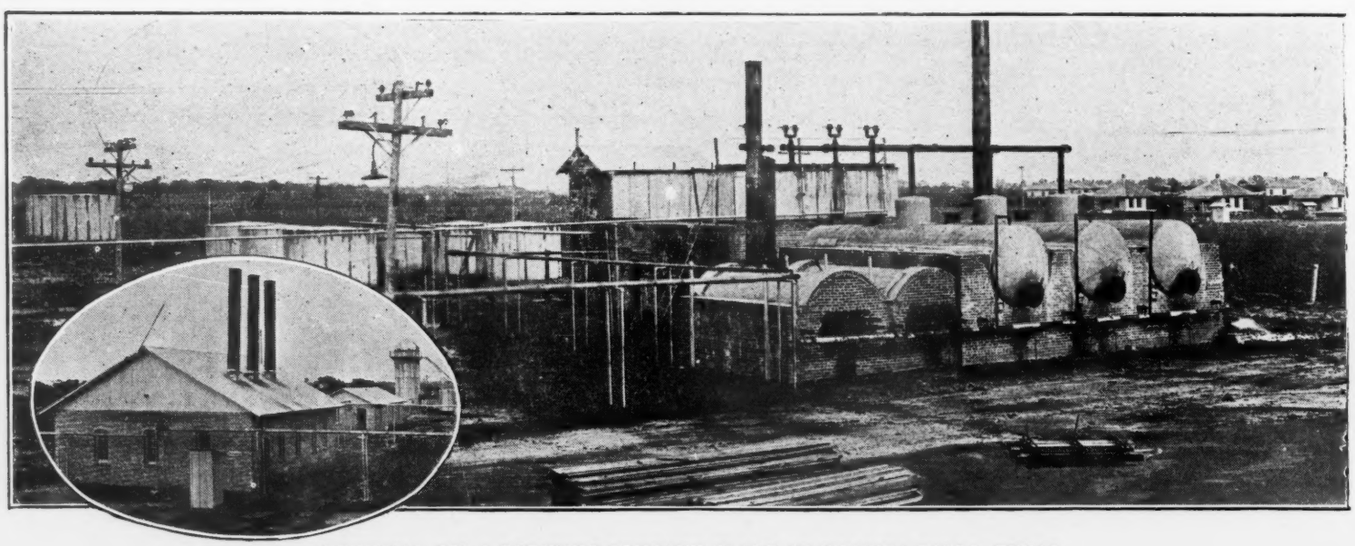
The Eggleston Oil Refining Company's plant at San Antonio, operating with a daily capacity of 1200 barrels, is now being enlarged to handle 1800 barrels of crude each day. The crude used by this refinery is coming mostly from the Somerset field, near San Antonio, but some of the Burkburnett oil is being used. The company operates 40 tank cars and the plant site consists of eleven acres. The products are gasoline, kerosene, distillates and gas oil, and a samll private pipe line is operated. All of the employes live near the plant.

BUILDING REFINERY AT AMARILLO

The Amarillo Petroleum & Refining Company, capitalized at $600,000, is now constructing a plant at Amarillo to have an initial capacity of 2000 barrels daily, but the officers have already decided to increase this capacity to 3500 or 4000 barrels. The company has a site of 30 acres in the switching limits of the city, and the construction work is going forward at a rapid rate. The products will be gasoline, kerosene and a full line of lubricants. Officers of the company are: Reece S. Allen of Wichita Falls, president; F. A. Kormann of Oklahoma City, vice president, and B. F. Yoakum of New York City, treasurer.



EVANS-THWING REFINERY, JUST ACROSS FROM THE PIERCE REFINERY, ONE AND A HALF MILES FROM THE STOCK YARDS, FORT WORTH



TEXHOMA OIL & REFINING COMPANY PLANT AT WICHITA FALLS, TEXAS.

Lubricating Oils

OFFERING to the wholesale and jobbing trades, exclusively, for delivery in December and regularly thereafter in tank cars or barrels, the highest grades of Viscous and Non-Viscous, Zero Test Lubricating Oils.

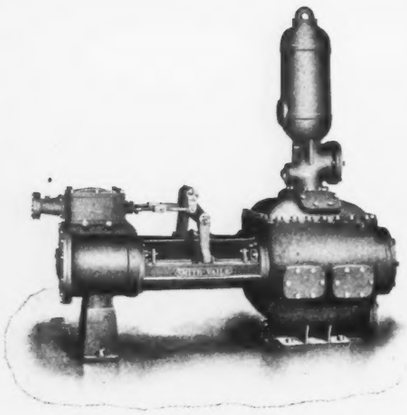
Walker Oil & Refining Co.

Deep Water Connections: THE HOUSTON SHIP CHANNEL
for shipping United States Eastern Seaboard and Export Trade

Railroad Connections: THE SOUTHERN PACIFIC SYSTEM
for prompt inland shipments, in barrels or tank cars.

Walker Oil & Refining Company

Refinery, Morgans Point, Texas
Main Offices: Kress Building
HOUSTON, TEXAS



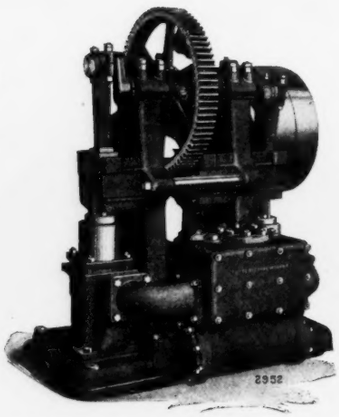
SMITH-VAILE DUPLEX
Direct Port Pattern

SMITH-VAILE

Manufactured by
PLATT IRON WORKS

PUMPS

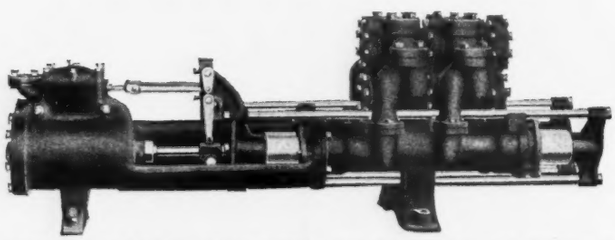
Steam Duplex—Power Driven Triplex



SMITH-VAILE TRIPLEX
Power Driven Type

We have in Houston a complete stock of Standard and Low Service Pumps. Pumps Fibrous Packed for water; also specially fitted with rings and springs for oil.

REPAIR PARTS IN HOUSTON STOCK



SMITH-VAILE DUPLEX, PRESSURE PATTERN
Outside End Packed Pot Valve

Tennant-Lovegrove Co., Inc.

ENGINEERS

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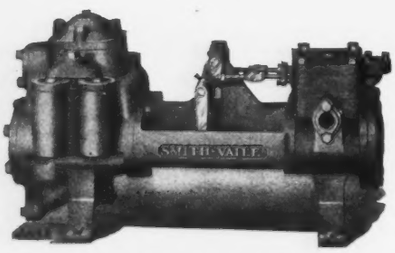
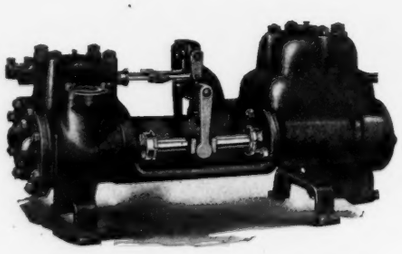
HOUSTON



SMITH-VAILE DUPLEX
Yoke Pattern

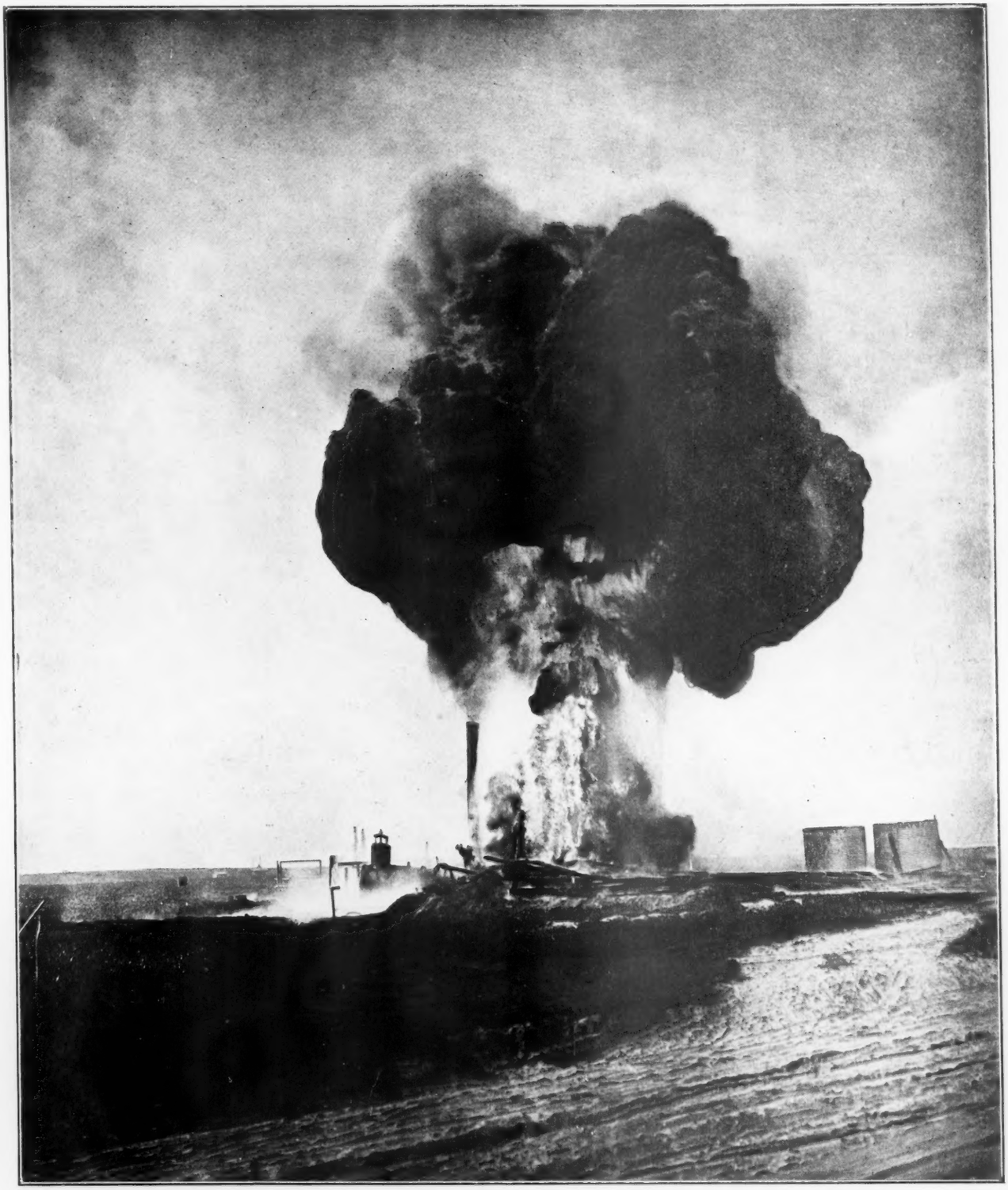
Also—

INGERSOLL-RAND AIR COMPRESSORS, VACUUM PUMPS
FRANKLIN WATER TUBE BOILERS
SPRINGFIELD INTERNAL FIRED CORRUGATED FURNACE BOILERS
SKINNER UNAFLOW STEAM ENGINES
HOPPES FEED WATER HEATERS
LEAHY OIL BURNERS
CAMERON CENTRIFUGAL PUMPS
SPRAY COOLING PONDS AND AIR WASHERS
AUTOMATIC REFRIGERATING EQUIPMENT
SIMS FUEL OIL HEATERS
GRISCOM-RUSSELL EVAPORATING EQUIPMENT
INGERSOLL-RAND "P-R" OIL ENGINES
PNEUMATIC TOOLS—INGERSOLL-RAND



SMITH-VAILE DUPLEX
Turret Pattern

Engineering Section



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Golden Cycle Well on Fire at Burkburnett

For
Emergency Service
or
Regular Needs

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Kirby-Bonner Lumber Company

HOUSTON, TEXAS

Yellow Pine for Derricks, Rigs *and* Permanent Construction

Twelve Mills: Shipping Capacity 1,500,000 per Day; 75,000,000 Feet in Stock

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Producers of Natural Gas and Crude Petroleum

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612 American Exchange Bank Building
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Fuel Oil
For Sale

ABOARD CARS AT MONT-BELVIEU, TEXAS, ON THE DAYTON AND GOOSE CREEK RAILROAD OR ON BOARD BARGES ON CEDAR BAYOU, NEAR MONT-BELVIEU, TEXAS

Territory Developed
Wells Contracted

L. F. and C. H. BENCKENSTEIN
Vinton, Louisiana

Extinguishing Burning Oil Wells

How Clayton Handled Bad Fire in Texas Field

If the average Southwestern producer should be asked, "Who is the best fire fighter in the oil business?" the answer would be, "Why, Charley Clayton, of course." He hasn't any medals for fighting, because the kind of fire fighting he has been doing is of a kind that usually gets small publicity, and Charles P. isn't the publicity seeking kind, anyway. The accompanying article describing how he extinguished several fires, was written for the United States Bureau of Mines and printed in a Bureau bulletin some time ago. The practical producer will find it worth while. At the time the article was written he was with the Producers Oil Co. He is now with the Caddo-Central Oil Co. of Louisiana.—Editor.

OIL well fires are often much more difficult to overcome than gas well fires, because the well may be producing in such large quantities that the oil is not all consumed in one tapering flame, as with gas, but may flow away in a blazing mass for a considerable distance. Also the burning oil soon heats the ground around the well so hot that no matter how often the fire may be extinguished it will immediately re-ignite.

Thus, no definite rules can be given for combatting fires at oil wells, as each burning well presents a problem of its own. The following descriptions of methods that have been successfully used are given, as has been stated, not with the belief that any one of these could be successfully applied to some other fire, although it might be, but with the hope that the ideas presented may, when used singly or in combination, be of service to operators in dealing with such fires in the future.

Method Used on Fire at a Texas Well

C. P. Clayton, superintendent of the Producers Oil Company, gives the following account of an oil well fire in the Humble field, Texas, which was extinguished under his supervision in February, 1916.

The well had been flowing for two days and was making about 6000 barrels daily. It was being brought under control at the time the fire occurred, and most of the oil was discharging through a 6-inch flow line extending about 20 feet from the head of the casing. Immediately over the well, about six feet above the derrick floor, oil was discharging through a two-inch opening in a four-inch tool joint at the rate of about 100 barrels per hour. The fire was caused by an electric spark in repairing a broken power line on the derrick floor.

The well was situated in a heavily timbered country, and, as a first precaution, all timber, stumps and other inflammable material were removed from the vicinity. Twenty-nine portable field boilers were then set up, and a network of four-inch and two-inch steam lines laid about the well. Also, connections were made to seven boilers already installed at nearby drilling wells, and seven two-inch water lines were laid. While this was being done a circular levee about three feet high was thrown up around the well, at a distance of about fifty feet from it. Opposite the flow line a ditch 218 feet long and four feet wide at the top, tapering to a depth of about four feet, was dug, which opened into a circular ditch of about the same depth, and having for its outer circumference a radius of about 75 feet. This arrangement is shown graphically in figure 1. The straight ditch was then covered with corrugated iron, upon which was placed about two feet of earth. A piece of 36-inch smokestack was then placed in the mouth of this ditch and shoved up to within about 25 feet of the end of the flow line.

When all was in readiness, an asbestos lined swedge nipple about eight inches in diameter, attached to 80 feet of three-inch pipe, was placed over the spray of burning oil discharging from the tool joint. This was done by men working from behind a corrugated iron shield.

At the second attempt this part of the fire was quenched and the oil discharging at this point, or the greater part of it, was made to flow through the three-inch pipe. Immediately the steam and water was turned on the blaze at the end of the flow line (the men advancing behind shields) in such a manner as to drive the flame into the mouth of the 36-inch stack and extinguish it. The men protected their hands with gunny sacks and asbestos shields, and streams of water were continually sprayed upon them as they advanced. The preparatory work required about 17 hours; the actual quenching of the flames about 15 minutes.

Method Used at a Fire at a Well in Louisiana

Mr. Clayton also describes a method used by him to extinguish an oil well fire in Caddo Parrish, Louisiana, in 1911. This well burned 26 days, 2 hours and 10 minutes, and when the fire had been put out, a gage record showed a production of 48,000 barrels daily. The discharge was so great that the oil was not all consumed until some of it had flowed a distance of more than 100 feet from the well.

Thirty-six boilers were erected and the fire fought with steam for six days, but without success. At the end of this time this method was abandoned and a circular levee about three feet high and 200 feet in diameter was thrown up around the well, which formed a pond of blazing oil on which all the flow was consumed.

The well being on a hillside, a tunnel 4 by 6 feet by 328 feet long was driven (see fig. 2), striking the outer casing at a point 18 feet below the surface, measured to the center of the face of the tunnel. The well contained three strings of casing, 10-inch, 8-inch and 6-inch. A split clamp was placed around the 10-inch casing, and to this was attached a string of 6-inch pipe extending beyond the mouth of the tunnel. An especially constructed 4-inch bit, shown in Plate XVIII, A, was made from a case-hardened nipple. This bit had in one side

Here is the tool made to drill a hole in the casing of the Harrell well. It was designed by the Sharpe-Hughes Tool Co. and is now in possession of the Hughes Tool Co., successors to Sharpe-Hughes, Houston, Texas

PLATE XVIII, A

TEXACO

Petroleum and its products

HIGH GRADE UNIFORM QUALITY

Gasoline	Paraffin Oils	Asphalts
Naphtha	Wax-Oil Stock	Road Oils
Kerosene	Oil Soap	Asphalt Cement
Signal Oils	Miners' Oil	Pipe Coating
Distillates	Black Oil	Greases
Gas Oils	Car Oil	Cup Grease
Spindle Oils	Fuel Oils	Gear Grease
Motor Oils	Diesel Fuels	Axle Grease
Engine Oils	Bunker Oils	Solid Lubricants
Machine Oils	Cylinder Oils	Petroleum Coke
Dynamo Oils	Cylinder Stocks	Metal Polishes
Red Oils	Gear Lubricants	Roofing Paper
Pale Oils	Wire Rope Lubricants	Roofing
Floor Oils	Waxes	Roofing Cement

THE TEXAS COMPANY

NEW YORK
17 Battery Place

CHICAGO
McCormick Bldg.

HOUSTON
The Texas Co. Bldg.

Offices in Principal Cities

EXPORT DEPT: 17 Battery Pl., N. Y. C.

a hole 2 inches square and was screwed onto the end of a string of 4-inch pipe; the joints of the pipe after being screwed tightly together, were also riveted. This string was placed inside the 6-inch pipe and was fitted on the outer end with a cap and a sprocket wheel to which was attached a rotary chain drive. A deadman was set opposite the end of the pipe and a jack set between it and the cap.

The chain drive was then set in motion and a hole drilled through the casings. Careful measurements were kept on the jack as the 4-inch line advanced, so that the opening in the bit would be stopped as nearly as possible in the center of the 6-inch casing. When this point was reached, the bit was turned so that the hole was "looking" down into the well. A circulating pump was connected with the 4-inch pipe and asbestos shavings forced through it under pressure of 1200 pounds per square inch. After this had been done for a few minutes the pipe was so turned that the hole in the bit was on top and the flow of the well was shut off. The oil on the surface, inside the levee, was soon consumed and the fire extinguished from lack of fuel.

In discussing this method, Mr. Clayton states that the tunnel, where it intersected the casing, was too near the surface. He thinks the distance should have been at least 30 feet, as several of the men in placing the split clamp were almost overcome by the heat and gas fumes. Also, the tunnel was too small. Had it been 6 feet by 6 feet instead of 4 feet by 6 feet, the labor of driving it and of placing the 6-inch pipe would have been greatly facilitated and the time reduced.

Method Used by M. E. Lombardi

M. E. Lombardi, superintendent of construction of the fuel oil department of the Southern Pacific railroad, describes an oil fire extinguished under his direction which occurred in the Midway oil field, California, in 1913.

The well had been drilled by the rotary system and caught fire just after it had unexpectedly started flowing, so the rotary table was still in place. After the floor of the derrick had burned the table crumpled the end of the casing, which extended several feet above the ground, until the table rested on the ground. This formed a baffle and the oil spurted out laterally with such force that before long a crater about 50 feet wide by 40 feet deep was formed.

A large number of field boilers were set up near the well and the usual method of applying steam and water resorted to. The fire was repeatedly extinguished, but the sides of the crater had become so hot that the gas and the oil were reignited as soon as the blanket of steam lifted.

The well was on a hillside and the soil was a heavy clay. A pit about 50 feet in diameter and 3 feet deep was dug in the hillside about 200 feet from the well and about 30 feet above it.

In this pit mud was mixed, fluid enough to flow freely, and the mixture was discharged into the blazing crater. The pit was filled and emptied three times in quick succession. The third application permanently extinguished the flames, the steam formed by the drying mud cooling the walls of the crater below the point where they would reignite the oil. This method is shown in figure 3.

The fire burned sixteen days and, when finally conquered, the well was found to be flowing at the rate of about 1000 barrels daily.

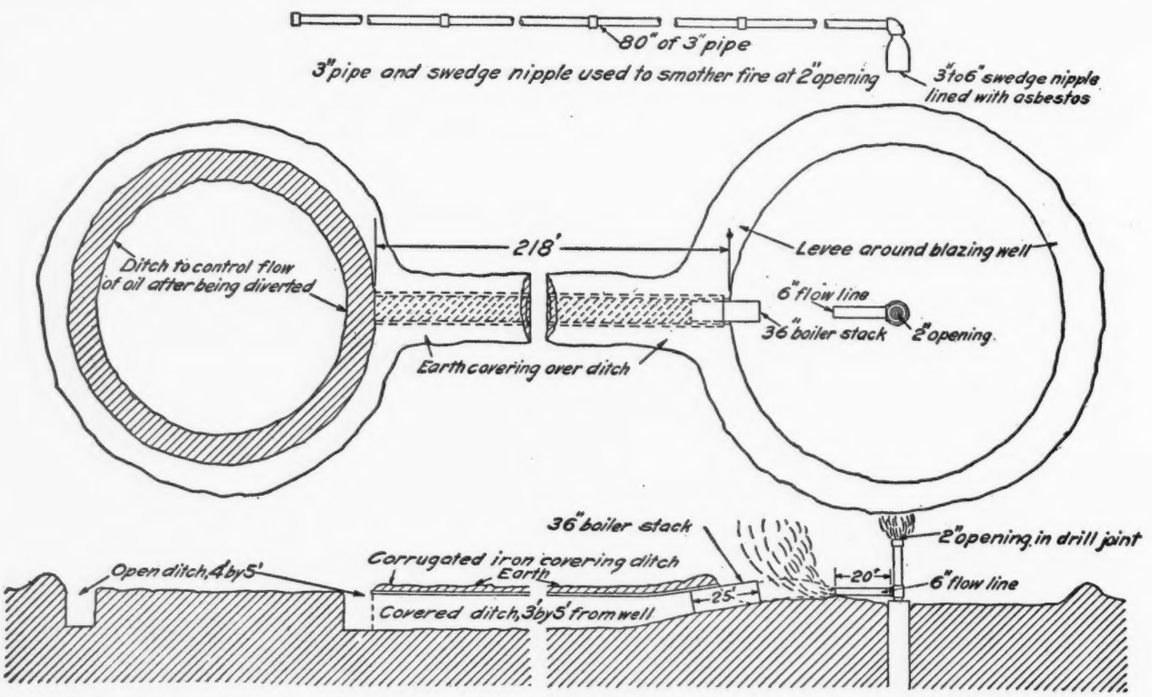

80" of 3" pipe
3" pipe and swedge nipple used to smother fire at 2" opening
3" to 6" swedge nipple lined with asbestos
Ditch to control flow of oil after being diverted
218'
Levee around blazing well
6" flow line
36" boiler stack
2" opening
Earth covering over ditch
36" boiler stack
2" opening in drill joint
Corrugated iron covering ditch
Earth
Open ditch, 4 by 5'
Covered ditch, 3 by 5' from well
25'
20'
6" flow line

FIGURE 1.—Arrangement for extinguishing an oil-well fire by forcing blaze into a boiler stack, used by C. P. Clayton.

HAZARDS AND PRECAUTIONS ABOUT TANK FARMS AND REFINERIES

Tank Construction

All tanks about tank farms and refineries should be of steel construction throughout, with gas-tight roofs on steel roof supports. Tank stairways should also be of steel. Gage holes should be fitted with tight iron caps, which can be screwed down and will prevent the escape of gas. Swing pipe lines should pass through stuffing boxes. These boxes should be kept at all times in gas-tight condition. A vent pipe of proper size should lead from a point near the apex of the roof down the side of the tank, and thence underground on a true gradient to a point outside the fire levee, where it should terminate in a vertical standpipe at least 20 feet high. This pipe should be so laid that the lowest point is the bottom of the standpipe, where a small drain should be provided to remove any possible accumulation of water or condensate from the gases. A tee having each run closed with a fine meshed wire gauze, should be "bull-headed" into the top of the standpipe.

As has been previously mentioned, an arrangement whereby gases from vent pipes would be passed through an absorber or condenser or otherwise profitably utilized, would be far better than releasing the gases to the atmosphere.

Pipe Lines

Pipe lines connecting storage tanks should be underground for at least part of the distance, or otherwise thoroughly grounded. The writer has been unable to find any instance where a tank has been ignited from lightning following exposed piping, but such a condition might easily exist. Therefore it is a wise precaution to bury the pipes in the ground or, in some localities, even place insulating joints in them.

Loading Stations

Fires are said to have been caused at loading stations, where ships discharge or take on oil, through electrical sparks formed when connection to the ship was being made or broken. The writer has been unable to find any instance where the origin of the fire was actually traced to this cause, but it is quite possible that fires could be started in this way, especially where the pipe lines leading from the wharves pass near power lines, electric railways, etc. Most companies ground their loading pipes at the wharf. This is done by soldering a copper wire to the pipe; the other end of the wire is attached to a copper plate, which is sunk in the mud beneath the water.

Suction Pipes

All tanks should be provided with large suction pipes so that in case of fire as much

Power poor? Pumps good, but your belts, eh?

Throughout the oil fields on

Vacuum Plants
Drilling Rigs

Powers and Refineries

Still, it isn't to be expected that an ordinary belt would stand up under the grit, oil, mud and water of the oil fields.

Stanley will give the sort of service the toughest job calls for, because it is built for such duty —and its cost is about one-half that of leather.

It is solid woven—and has no plys to strip apart, if the glue dries out or stitches wear through. The flexibility is unusual and allows the belt to gain a hold on more of the surface of the pulley than ordinary—combining with the high friction of the belt to cut down slippage.

Even in the alternate wet and dry of "exposed-to-the-weather" work its stretch is very small, and one adjustment is all that is necessary under normal conditions.

Thirty-five years of belt manufacturing are back of any belt we might "prescribe" as a cure for your belt troubles. Put a trial belt on duty and watch its performance.

STANLEY BELTING CORPORATION

34-38 South Clinton Street, Chicago

Help make Wichita—Wichita will make you

Did you ever see a boy just about to become a man?

His legs are too long and too big for his short trousers.

His big body is cramped with his little boy clothes; he is uncomfortable; he is undergoing that terrible ordeal of transition from a boy to a man.

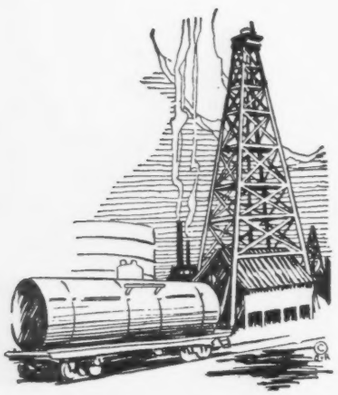
Towns suddenly forced to become cities in size, without warning, are like boys bursting the seams of their short trousers. They need room, and until they get it they are uncomfortable.

WICHITA FALLS has been suffering with "growing pains."

There were more people than there were houses.

There were more houses than there were facilities for serving them.

This was only natural, when you consider that WICHITA FALLS' population jumped from 17,500 to nearly 50,000 in twelve months.



Wichita Falls is preparing for its new citizens

Now under construction:

One six-story fireproof modern hotel.
City National Bank Building, ten stories.
National Bank of Commerce Building, eleven stories.
Clint Wood Building, seven stories.
Forty-three brick business buildings, from one to five stories.
Eleven hundred and twenty-five new residences now under construction or built since January 1, 1919.
Preparations for bigger and better facilities in every phase of the city's life.
New streets are being paved.
County roads are being improved; three million dollar road program.
City conveniences being extended.

WICHITA FALLS has room for you if you want to come here with the sincere purpose to put something into the upbuilding of the community as well as to take something out; if you will come with a desire to contribute your share to the building of a greater, better city; if you want to grow up with this YOUNG GIANT of the Texas oil fields.

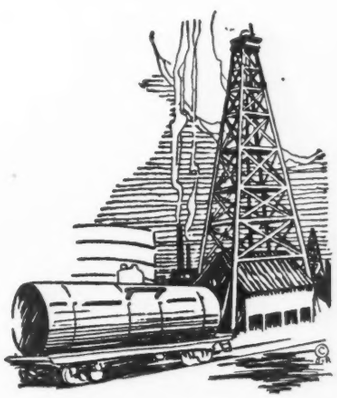
WICHITA FALLS CHAMBER OF COMMERCE

Wichita Falls has been having "growing pains"

WICHITA FALLS today offers unparalleled opportunities to the man or woman who will come here with a sincere purpose to make himself or herself a real part of the community.

WICHITA FALLS is just beginning a new era of modern cityhood. It is the center of a vast oil territory now producing 125,000 barrels of oil per day, with many wells waiting to be brought in until facilities can be provided for taking the enormous flow of oil.

WICHITA FALLS is the center of refining activities for this section. The refineries now in operation in Wichita County number twenty-five, with a maximum daily capacity of 55,700 barrels. By January 1, thirty-one refineries will be in operation in Wichita County, with a maximum daily capacity of 66,200 barrels. A number of other large and important refineries are operating within fifty miles of WICHITA FALLS, but outside of the county.



WICHITA COUNTY produces more oil than any county in the United States.

WICHITA FALLS is to be the headquarters of the new railroad now being built into Stephens, Eastland and Comanche Counties oil fields, and is destined to be the real oil city of this section.

WICHITA FALLS has grown by such enormous leaps and bounds as to astound her larger sisters of the Lone Star State and to loom large on the horizon as the coming metropolis.

The "little fellows" brought in the Wichita County oil fields, and they profited richly. Today mighty financial interests are represented here.

WICHITA FALLS has had her nightmare of speculation. Crowds of men from every corner of the earth have come wooing Fortune in a mighty game of chance. The winners are here to build and to make this their operating headquarters.

WICHITA FALLS IS THE OIL CENTER OF THE TEXAS FIELDS

Write For Information.

WICHITA FALLS CHAMBER OF COMMERCE

oil as possible can be removed to other tanks or reservoirs. Tanks containing crude oil should also be provided with bottom drains, connected with pipes discharging at a safe distance from the tank. As the tank burns, these drains should be kept open to remove the water that settles from the oil. This precaution is very important, as a small amount of water in the bottom of a tank when converted into steam will cause the tank to boil over violently and the blazing froth may be carried by the wind along the ground and over the top of the fire levees, spreading the fire to other tanks or structures.

Levees

Where possible, tanks should be surrounded with a dike or levee of sufficient height to hold one and a half times the capacity of the tank. Each tank having a capacity of 5000 barrels or more, which is used for the storage of oil, should be placed at least 300 feet, measured from shell to shell, from any other tank, and at least 150 feet from derricks, buildings or other inflammable structures.

For a distance of at least 150 feet from the tank the ground should be kept free from weeds, grass and rubbish.

Lightning Rods

The writer has made many inquiries among operators regarding the use of lightning rods, but has been unable to find any instances where there is proof that their use has prevented a tank or other structure from being struck. The fact that they present a line of least resistance for electricity to pass from a rain cloud into the ground might prove a serious menace to the structures upon which they are placed because of the enormous voltage they might be required to carry.

Precautions About Stills, Etc.

Oil stills, heat exchangers, agitators, dephlegmators, etc., should preferably be placed in the open. Where protection from the elements is necessary, roofs and roof supports should be of fireproof materials throughout.

Concrete or brick fire walls of reasonable height (say 3 feet 6 inches) should be constructed at various points about the stills and other apparatus, dividing the entire installation into small units where possible fires can be confined until they are extinguished. In the opinion of the writer this provision is important and should be incorporated into the design of every refinery construtced.

Run-Down Tanks, Etc.

Storage tanks, run-down tanks, stock tanks, agitators and other closed containers should be equipped with steam smothering lines which will admit steam into the top of the container on a moment's notice. On the approach of a thunderstorm, steam should be turned into the tanks, and the space between the surface of the oil and the roof of the tank kept filled with steam until the storm has passed.

Position of Transformers

Where electric power is used for operating any part of a refinery the transformers should be at a safe distance from all sources of inflammable gases. This will usually mean placing the transformers outside of the refinery. Great care should also be exercised in placing switches and motors, as sparks from making and breaking of circuits have often been the cause of disastrous fires.

Smoking

Forbid smoking about the plant and see that the rule is enforced. Post "No smoking" signs in all prominent places. Provide a room where the men can smoke after the lunch hour. This room should be away from the other structures and should be of fireproof construction throughout.

Matches

Forbid the use of "strike anywhere" matches. Permit no matches to be used about the plant except those that strike only on the box in which they are furnished. The Producers Oil Company furnishes its employees with safety matches free of charge, put up in boxes having a warning printed on the outside.

Change Rooms

Provide well ventilated metal lockers for the employees' clothing. These should be installed in a fireproof building such as the smoking room. Never permit employees to dry wet clothing on steam radiators; drying clothing in this way has caused many a fire. Wet garments should be hung up to dry by circulation of air. Never permit employees to hang wet garments on electric wires.

Fire Brigades

Tank farms and refineries should equip and maintain a fire brigade, the members being employees about the plant. If the plant force is too small for forming such an organization, the force should be combined with that of some adjacent plant or factory. The organization of the brigade should be along the lines of a city fire company. In organizing and equipping it, probably no better advice could be obtained than that of the fire chief in the city or town where the plant is situated or in the nearest adjacent city.

Water Systems

A high pressure water system should be maintained, and fire hydrants should be placed at convenient positions about the plant, especially in the vicinity of wooden structures. The hydrants should be of standard construction and should have at least two outlets with separate valves. The threads on the outlets should correspond exactly to those on the hose of the nearest city fire department. If there is no public fire department then the threads should correspond exactly to those on the hose coupling of the nearest factory or refinery. This is very important.

Caps to hydrant outlets should be kept well oiled and not permitted to get jammed. All hydrants should be tested at least once a year. In cold localities this should be done in the summer time.

Cotton, rubber-lined hose should be tested once a year with water under a pressure of 100 to 125 pounds. Also, water should be run through it at least three times a year to preserve the lining. Unlined cotton hose should not be tested with water; such hose rots quickly from moisture and should be kept as dry as possible at all times. Extra hose should preferably be hung up or placed on an inclined plane. Where this cannot be done, it should be well dried, then loosely rolled, and laid flat on a shelf. Hose that has been used with salt water should be thoroughly cleaned with fresh water before being dried.

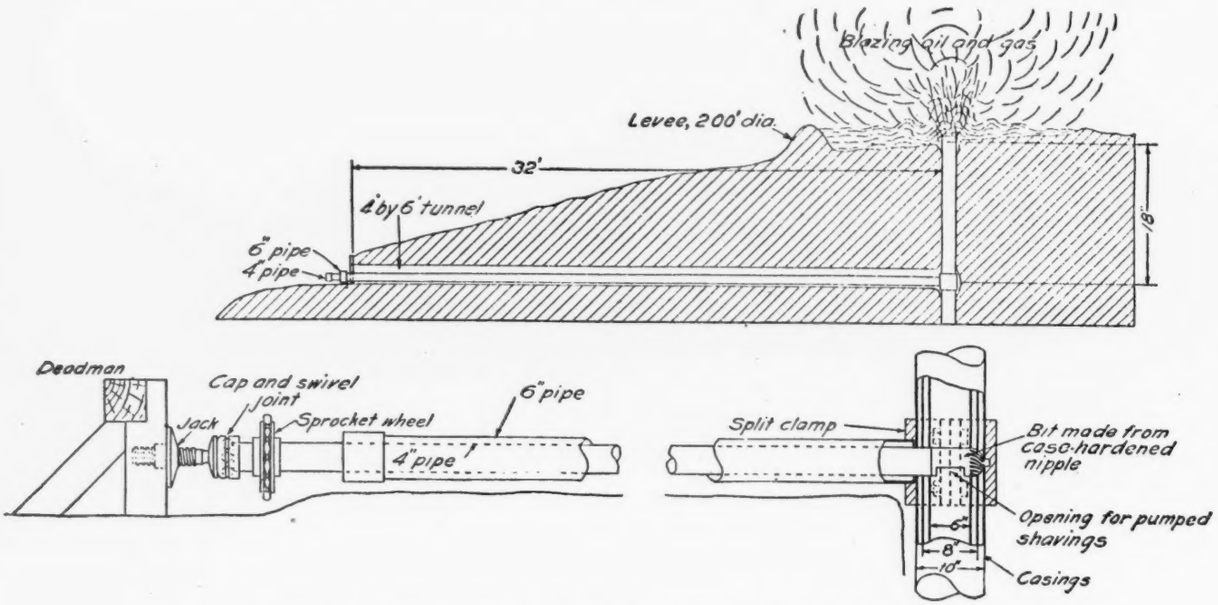


FIGURE 2.—Method of extinguishing oil-well fire by shutting off flow, used by C. P. Clayton.

HAZARDS AND PRECAUTIONS ABOUT DRILLING AND PRODUCING WELLS

Many fires about drilling wells have been started by having the forge inside of the

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The Hughes Tool Company
Houston, Texas

derrick, also by having an open fire in the derrick in cold weather. Neither of those practices should be permitted. Tools should be dressed at a reasonable distance from the rig, or, better still, at some central station. However, in "wildcat" work sending tools to a central station is seldom feasible.

Gas fires about oil wells being drilled are in most instances wholly inexcusable, as permitting gas to escape unchecked from the well is a wasteful and, as a rule, unnecessary procedure. The gas should be shut in as the drilling proceeds.

Position of Boilers

Boilers should be placed so that they will not be a source of danger if a flowing well is brought in, or if flow tanks or stock tanks are overtopped. In some districts having prevailing winds, as along sea coasts, it may be feasible to place the boilers on the windward side of the well so that the greater part of the time the well gases will be blown away from and not toward the boilers. It is well to have wire gauze protectors over the tops of the boiler stacks, even at plants where oil is used for firing the boilers.

Lights for Rigs

Drilling rigs should be lighted, where possible, with electric lights and not with open torches. At producing wells, only electric lights should be used; neither these nor the wiring should be placed on the derrick, but rather on a pole several feet from it, and the bulbs should be protected with wire guards. If the well is flowing or producing much gas, it is better to have the lights in a cluster on a pole 50 feet or farther from the well.

Static Electricity

Static electricity generated by the band-wheel belt, or other moving parts of the machinery, has often caused fires. J. C. McCue, superintendent of the Producers Oil Company, cites an instance where he watched static electricity sparking between the band-wheel belt and a wet board, one end of which was buried in the ground, for two hours or more, until the board burst into flame. Mr. McCue takes the precaution to see that all machinery parts are grounded and that belts are provided with properly constructed copper brushes attached to pipe; the pipe being grounded.

An instance has been brought to the attention of the writer where a gas well in process of being drilled was ignited three times before the cause was found to be static electricity generated at the band wheel, passing through the shaft of the wheel into the sand reel and along the sand line to the bottom of the bailer, where it formed a spark in discharging from the bailer into the top of the casing, as the bailer was being lowered into the top of the well.

Shooting Wells and Blow-outs

Fires have been caused in shooting wells, and in striking gas pockets while drilling, by rocks being blown forcibly against the sheave wheels or rig irons.

However, in the majority of blow-outs the fire, if there is one, will be caused by gas or oil coming in contact with the boiler fires. Sparks produced by rocks striking against the rig iron will not ignite the column of gas or oil unless the spark happens to be formed on the outside of the column where there is sufficient air for combustion.

Precautions About Wells Where Compressed Air Is Used

In using compressed air for increasing the recovery of oil from wells, it is stated that "air-gas" used in gas engines has been ignited and the flame traveled back in the pipes to the well. This can be prevented by inserting at the proper point in the gas line a section of larger pipe filled with small iron tubes or rods that will smother the flames by cooling, much the same as the gauze in a safety lamp prevents gases being ignited by the flame of the lamp. Sometimes oil will flow from a well by the compressed air, and fires are reported to have been caused by oil getting into the air-gas and reaching the gas engines. This can be prevented by installing a trap in the gas line, through which the gas must pass before reaching the engine.

Gas Scrubbers

Where natural gas is taken directly from a well and used to drive engines, fires have been started by sand in the gas striking the sides of the exhaust pipe and causing sparks. This danger can be eliminated by passing the gas through a "scrubber" before it is admitted to the engine. Ordinary tubular boilers are often used as scrubbers. Valves should be placed in such gas lines at safe distances from the engines so that if the exhaust catches fire the supply can be quickly shut off.

Accumulation of Gas in Ravines

Disastrous fires have been caused by gas from flowing oil wells accumulating in ravines and low places in the vicinity of the wells and there being ignited, the fire striking back to the well along the stratum of gas.

The danger of allowing gas to accumulate in this manner is exemplified in a serious accident near Drumright, Okla., in May, 1915, although the fire did not strike back to the well. It was a calm, humid evening. An automobile, with a man and two women in it, was passing near some flowing oil wells. As the car crossed a culvert over a small creek, there was a terrific explosion. The women were so badly burned that they died within a few hours. The man was also badly burned. Investigation showed that a body of gas had accumulated along the creek bed, and the headlights of the automobile had ignited this gas. The flash was seen by people several miles from the scene of the accident.

Arrangement of Valves for Flowing Wells

Many companies equip their flowing wells with an arrangement of valves, as shown in figure 4. The lower valve has an extension stem, made from 1-inch pipe, of such length that the valve can be operated at 50 or 75 feet from the derrick. If the derrick, or the oil issuing from the flow lines should catch fire, this valve can be closed and the oil shut off until the fire is extinguished.

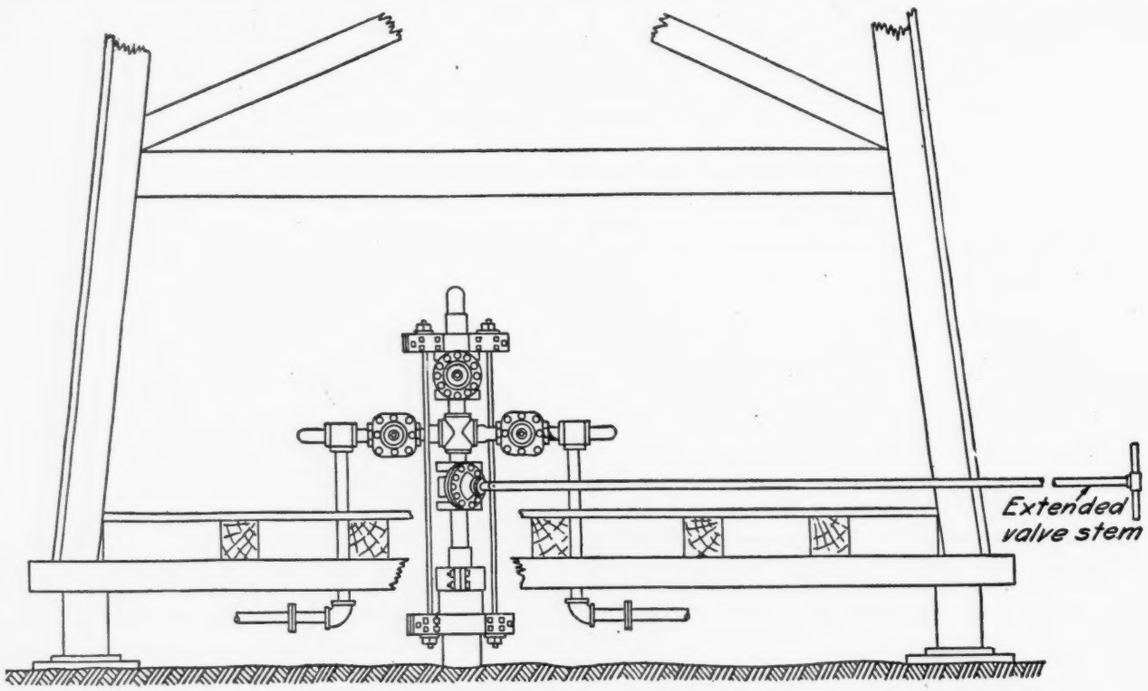
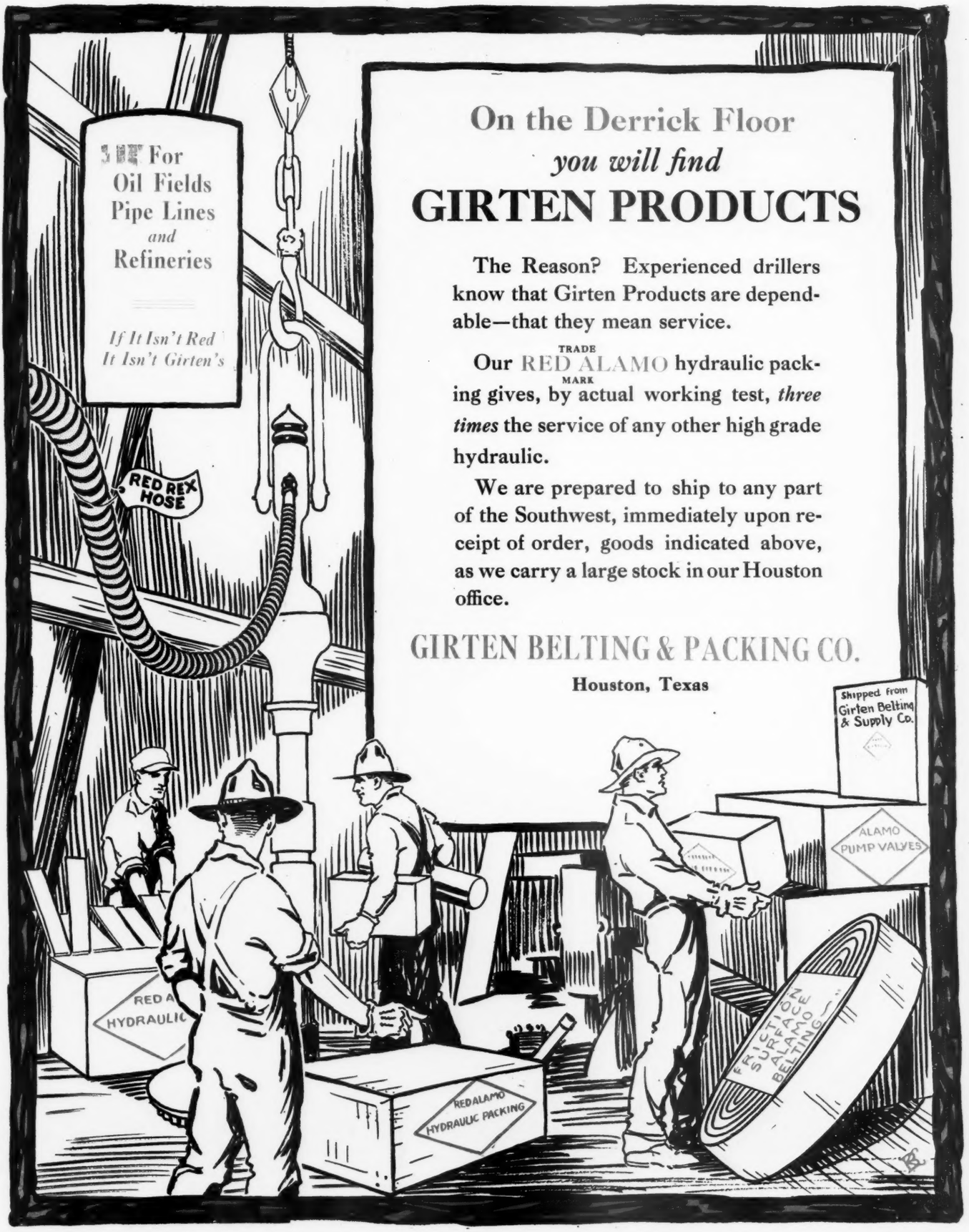


FIGURE 4.—Arrangement of valves for flowing wells.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Practical Drilling in West Texas

A consideration of various problems in new field

BY JOHN R. SUMAN

A practical article by a practical engineer who has operated in the section of which he writes, is presented herewith. It deals with the various phases of the producer's work, and the tables presented therein are the result of observation and experience. One table, in particular, will prove extremely valuable—that showing the amount of strain a string of pipe of given length will stand.

Mr. Suman is assistant to the president of the Rio Bravo Oil Company and formerly was in charge of operations of the Roxana Petroleum Company in Texas.—Editor.

THERE has been much written of late relative to the new producing fields in the Pennsylvania area of North Texas, both from a geological and a financial standpoint, but next to nothing has appeared in print relative to the technical side of this wonderful industry which has come into existence within the past two years. Very few people are aware of the difficulties that arise in drilling in this country, and fewer still realize what the cost of drilling really is. It is the object of this article to give some of the operating details concerned with the drilling and bringing in of wells in the North Central Texas area. This will include the current practice in such fields as Desdemona, Ranger, Breckenridge and Caddo; but no mention will be made here of methods of operating in the Burkburnett area, where the practice differs materially from that in the above mentioned fields.

CHAPTER I

METHOD OF DRILLING in NORTH CENTRAL TEXAS

Men from all parts of the United States are working in North Texas now both as drillers, and as foreman or superintendents in charge of work. This gives rise to keen rivalry, and California ideas are daily being pitted against Oklahoma and Pennsylvania ideas. Out of this melting pot of eastern, northern and western methods some very efficient ways of doing things are being developed.

The standard cable tool system of drilling is universally used in the area under consideration (Ranger, Desdemona, Breckenride, Caddo and adjoining territory). The rotary system of drilling has been tried out at Desdemona, Brownwood, Moran, and in one or two other places, but with only indifferent success.

Rigs for Drilling Wells

For drilling in the North Texas deep territory, where very long strings of pipe are used, a very heavy rig is absolutely necessary. Almost every one is using for this purpose an 84-foot derrick with a 22-foot base. For the deep territory of Young and northern Stephens County, the derricks should all be twin-legged, and the legs should be doubled to the top of the rig. These rigs should also be sway-braced. However, sway-bracing is not necessary in the territory where the wells are not to be drilled to a greater depth than 3000 feet, such as Desdemona.

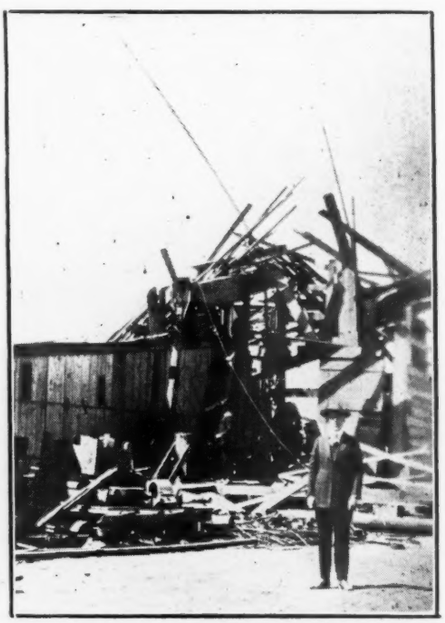
The following is a complete bill of material for an 84-foot by 22-foot sway-braced rig:

Pine Lumber:

Pcs. & Dimensions	Bd.ft
25—2"x12"x22'	1,100
10—2"x10"x20'	333
30—2"x12"x20'	1,200
18—2"x 8"x20'	480
16—2"x12"x18'	576
12—2"x 6"x20'	240
30—2"x 6"x16'	480
16—2"x 6"x14'	224
30—2"x 4"x16'	320
10—2"x 4"x12'	80
16—2"x 8"x18'	341
20—1"x 6"x16'	160
100—2"x12"x16'	3,200
45—2"x10"x16'	1,200
75—2"x 8"x16'	1,602
100—1"x12"x16'	1,600
50—1"x12"x18'	900
50—1"x12"x20'	1,000
Pcs. & Dimensions	Bd.ft.
70—1"x12"x14'	980
70—1"x12"x12'	840
2—4"x 4"x16'	43
	16,899

Extra for Sway-Bracing:

16—2"x10"x22'	588
18—2"x10"x20'	600
12—2"x10"x16'	320
8—2"x 8"x20'	292
8—2"x 8"x18'	213
8—2"x 8"x16'	171
	1,790



Derrick at Ranger Pulled in While Pulling on String of Casing

This shows very conclusively the necessity of having strong derricks. An accident of this nature would never occur with a sway-braced, doubled and twin-legged derrick such as is described in this article.

Pine Timbers:

1 Beam	14"x24"x24'....	824
1 Main Sill	16"x16"x28'....	765
1 Sub Sill	16"x16"x16'....	341
1 Sampson Post	16"x16"x16'....	341
4 Mud Sills	16"x16"x18'....	1,536
3 Mud Sills	16"x16"x14'....	896
4 P. & C. Sills	12"x12"x12'....	576
1 Reel Sill and Post	12"x12"x18'....	216
1 Bunting Pole	6"x 8"x22'....	88
4 Braces	6"x 8"x14'....	224
4 Braces	6"x 8"x16'....	256
2 Side Sills	10"x10"x24'....	400
6 Derrick Sills	8"x10"x22'....	880
2 Engine Blocks	10"x20"x10'....	267
4 Casing Rack	8"x 8"x20'....	426
		8,056

Oak Timbers:

Pcs. & Dimensions		Bd.ft
1 Jack Post	14"x16"x14'....	261
2 Crown Blocks	6"x16"x16'....	256
1 Bull Shaft	18"x18"x14'....	378
1 Swing Lever	8"x10"x10'....	67
4 B. & C. Posts	12"x12"x12'....	576
1 Pitman	5"x12"x12'....	60
1 Bumper	8"x10"x12'....	80
1 Calf Wheel Shaft	18"x18"x 6'....	128
8 Keys	3"x 5"x14'....	105
		1,911

Total number bd. feet pine lumber...26,745
Total number bd. feet oak lumber.... 1,911

Total number bd. feet in rig.....28,656

This list does not include lumber for boarding up cellar.

Cellars vary in depth from 4 feet to 30 feet. Most operators drilling in country where much underreaming is to be done, like a cellar about 20 feet deep and 8 by 10 feet in area. It is customary to board the cellar up with 2-inch lumber and to stand a 10 by 10 inch timber in each corner.

Rig Irons

With the above outlined bill of lumber for a rig there should be furnished 6-inch rig irons such as are marketed by all of the large oil well supply companies. One hears numerous arguments as to the respective merits of Oklahoma and California pattern rig irons. However, by far the greater number of rigs being built at present are using the California pattern, or Ideal, rig irons, and there is no question but what they are giving the best service. For deep wells (3500 feet and over) the sand reel shaft should be 5 inches in diameter and 9 feet long, or the great weight of sand line carried is apt to spring it. The 6-inch by 10-foot sand reel shaft with double brake wheel, is slowly coming into use for extra deep territory where much bailing is necessary.

The chain-driven calf wheel is universally employed, and it is rarely that one of the old rope-driven calf wheels is seen.

It is the opinion of the writer that, in the Desdemona pool, where very few wells reach a depth of over 2750 feet and no very long strings of pipe are handled, lighter and cheaper rigs would do the work just as well as the present heavy ones. There is no reason why a standard Cushing rig with 72-foot derrick and no sway braces, and with 5-inch rig irons, will not do the work satisfactorily.

Steel Bull Wheels and Calf Wheels

Where drilling is carried to a greater depth than 3500 feet on a well, and wooden calf and bull wheels are used, one usually

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sees about three sets of bull wheels and possibly two wornout calf wheels laying out back of the rig before the well is finished. All of the larger companies are now using steel bull and calf wheels. One of these wheels will drill eight or ten wells with only a relining of the brake being necessary. The steel bull wheels have a double pressed steel tug rim and a wood-lined brake wheel with 10-inch face. These wheels are usually 8 feet in diameter.

Steel band wheels are also being tried out by some of the larger companies and they are proving very satisfactory. Some of the companies are using steel bull and calf wheel shafts with 3-inch by 12-inch wooden arms which bolt on. These are quite an improvement over a wooden wheels, but the wooden tug rim on the bull wheels is very prone to wear out after drilling a well or so.

CHAPTER II

TOOLS NEEDED FOR DRILLING in NORTH TEXAS

Wells to be drilled to a depth in excess of 3500 feet in North Texas are now starting with a 22-inch hole and setting some 20-inch pipe. This requires 20-inch bits, and means that large tool joints will be needed to stand the vibration. In the early days of the development, small joints were used on large bits and many pins were "jumped" as a consequence. The writer remembers, in the early days of Ranger, seeing over fifty auger stems laying outside a certain tool company's shop with battered boxes, and fifty bits stacked nearby with "jumped" pins.

The standard tool joint in use in North Texas on large bits is the 4 by 5-inch joint, threaded 7 threads per inch, I & H. This is used on bits from 20 inches to 10 inches in size. Of course, due to inexperience, pins will be "jumped" using this large size joint. However, if care is used in dressing to see that the bit is moon-faced just a little, and care is exercised in running to see that the driller does not "hitch too loose," very few pins will be broken.

The 8¼-inch and 6⅝-inch bits use a 2¾ by 3¾-inch pin, 7 threads I & H; and the 5 3-16-inch bits use a 2 by 3-inch joint, 7 threads I & H. All bits should be of the Mother Hubbard pattern. The familiar bottle-necked bit of California will sooner or later get the driller in trouble in North Texas when he gets "mudded up."

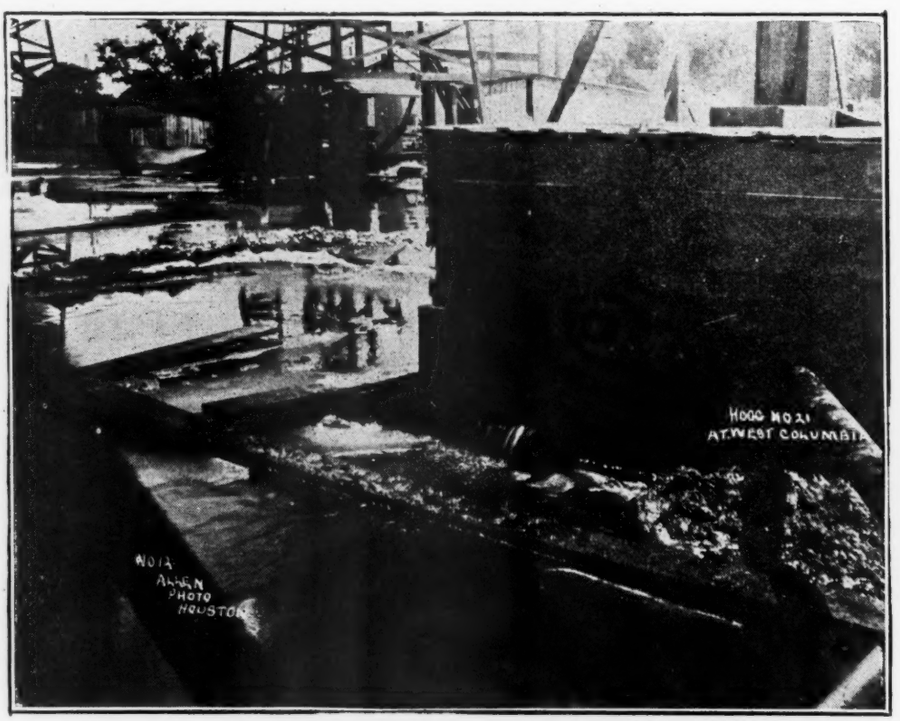
It is getting to be quite the practice in North Texas to use a 5½-inch by 30-foot auger stem with a 4 by 5-inch box and 3¼ by 4¼-inch pin. This permits using 6½-inch drilling jars with 3¼ by 4¼-inch box and pin, which is heavy enough. Some operators use jars with 2¾ by 3¾-inch joints in the big" hole.

All fishing and underreaming tools in North Texas for 6⅝-inch and larger diameter hole have 2¾ by 3¾-inch joints, 7 threads I. & H.

In most all of the fields the 10-inch and 8¼-inch casing are underreamed, so it is quite customary to furnish underreamers of these sizes with the tools.

Herewith is given a complete list of tools that will be needed to drill an ordinary well in North Texas, together with their cost on June 15, 1919:

1—40 horsepower, locomotive type, oil country boiler with guy wire, stack fittings and grate bars	$ 1,450.00
1—12"x12" oil country drilling engine with cross head pump, heater and extra balance rims	545.00
1—6"x4"x6" general service duplex pattern steam pump	250.00
1—1 kilowatt steam turbine driven electric generator	270.00
1—⅞"x4000' 6x19 crucible steel drilling line	960.00
1—9-16"x4000' 6x7 steel sand line at 10 cents	400.00
1—⅞"x750' 6x19 steel casing line	180.00
1—12" 6-plyx90' stitched rubber drilling belt	205.00
2—2½"x90' manila bull ropes	55.00
1—Set 15½" Fairs-Mannington Csg. Elevators	265.00
1—Set 12½" Fairs-Mannington Csg. Elevators	190.00
1—Set 10" Fairs-Mannington Csg. Elevators	180.00
1—Set 8¼" Fairs-Mannington Csg. Elevators	160.00
1—Set 6⅝" Fairs-Mannington Csg. Elevators	117.00
1—Set 5 3-16" Fairs-Mannington Csg. Elevators	85.00
1—30" three-sheave casing block—1250 lbs.	175.00
1—5" 360-lb. double swivel casing hook	84.00
1—20"x5' steel drill bit, 5" square, 4"x5" joint, 7 threads I. & H.; weight 2400 lbs.	408.00
2—18"x6' drill bits,5" square, 4"x5" joint, 7 threads I & H	748.00
2—15½"x7' drill bits, 5" square, 4"x5" joint, 7 threads I & H	544.00
2—12½"x7' drill bits 5" square, 4"x5" joint, 7 threads I & H	459.00
2—10"x7' drill bits, 5" square, 4"x5" joint, 7 threads I & H	390.00
2—8¼"x7' drill bits, 4" square, 2¾"x3¾" joint, 7 threads I & H	232.00
2—6⅝"x7' drill bits, 4" square, 2¾"x3¾" joint, 7 threads I & H	170.00
2—5"x7' drill bits, 3" square, 2"x3" joint, 7 threads I & H	112.50
2—5½"x30' auger stems with 4x5 box and 3¼x4¼ pin, 7 threads I & H., 5" square	523.42
2—4¼"x30' auger stems with 2¾x3¾ box and pin, 7 threads I & H., 4" square	290.00
1—3½"x30' auger stem with 2x3 box and pin, 7 threads I & H, 3" square	111.00
1—Set 6½"x8" stroke drilling jars with 3¼"x4¼" box and pin, 7 threads, 5" square	135.00
1—Set 5½"x4½" stroke drilling jars with 2¾x3¾ box and pin, 7 threads I & H, 4" square	94.63
1—Set 4¼"x5" stroke drilling jars with 2x3 box and pin, 7 threads I & H, 3" square	85.00
1—Set 5½"x36" stroke fishing jars, with 2¾"x3¾" box and pin, 7 threads I & H, 4" square	156.75
1—6½" swivel socket, 3¼"x4¼" box, threads I & H, 5" square	85.00
1—6½" socket, same jt. as above	39.20
1—5½" swivel socket, 2¾"x3¾" box, 7 threads I & H, 4" square	65.00
1—5½" stiff socket, joint as above	42.50
1—4¼" stiff socket, 2x3 box, 7 threads I & H, 3" square	16.50
1—14"x16' Ball and Dart bailer	262.00
1—11"x20' Ball and Dart bailer	168.00
1—8"x25' Ball and Dart bailer	183.00
1—7"x30' Ball and Dart bailer	98.00
1—5½"x30' Ball and Dart bailer	73.50
1—4¼"x30' Ball and Dart bailer	45.50
1—22" bit gauge	5.75
1—18" bit gauge	5.00
1—15½" bit gauge	4.55
1—12½" bit gauge	3.85
1—10" bit gauge	3.36
1—8¼" bit gauge	2.80
1—6⅝" bit gauge	2.52
1—5 3-16" bit gauge	2.13
1—2"x7 temper screw with "T" head, less clamps	126.00
1—Set drilling clamps with liners for ⅞" wire line	80.00
1—Set 2" inserted temper screw slips	13.20
1—Set 5" square 350-lb. tool wrenches with 4" liners	83.80
1—Set 3" square wrenches	45.00
1—4"x4"x12' derrick crane	60.00
1—1½-ton anti-friction chain hoist	70.00
1—Clevis pulley and clevis	4.00
1—Wire line spudding shoe and ring	17.00
1—Set casing wagons	40.00
1—No. 2 Barrett jack and circle complete	102.00
1—300-lb. bit ram	60.00
1—Steel derrick forge	75.00



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1—Oklahoma pattern steel tool box	75.00
1—Steel slack tub	60.00
1—300-lb. combined anvil and underreamer lug dressing block for 10" and 8¼" lugs	80.00
1—15½" spider and slips for 15½" and 12½" pipe and liner, and slips for 10", 8¼", 6⅝" and 5 3-16" pipe	520.00
1—Set Santa Fe back-up tongs	90.00
1—Pair Dunn "B" tongs with jaws for 10", 8¼", 6⅝" and 5 3-16" pipe	215.08
Fishing Tools:	
1—10" Slip Socket, 2¾x3¾ pin, 7 threads I & H, 4" square, 7⅛" bore, 2 extra sets slips	255.00
1—12½" bowl for above	25.50
1—15½" bowl for same	34.50
1—8" slip socket, same pin and thread as above, with 6⅝" bore, 2 extra sets slips	150.00
1—6¼" combination socket, same joint as above and equipped with pin and socket neck slips	78.75
1—8" center hole spear, same pin as the above	60.90
1—6¼" three-prong grab	90.00
1—6¼ latch jack, same pin as the above	42.75
1—6⅝" steel die nipple, male and female	26.12
1—8¼" steel die nipple, male and female	27.68
1—10" steel die nipple, male and female	40.38
1—12½" steel die nipple, male and female	73.68
1—8¼" spud with 2¾"x3¾" pin	121.60
1—Acme wire rope knife	185.00
Underreamers:	
1—10" double underreamer	525.00
2—Sets cutters for above	179.00
1—8¼" double underreamer	448.50
2—Sets cutters for above	142.50
1—6⅝" underreamer, with two sets extra cutters	307.75
1—No. 4 Star blower	32.35
1—No. 2 Barrett swivel wrench	40.00
Derrick Tools and Appliances:	
2—15" combination wrenches	4.40
1—18" combination wrench	2.96
1—18" Trimo wrench	2.85
2—14" Trimo wrenches	3.85
2—24" Trimo wrenches	7.97
6—36" sledge hammer handles	1,76
2—16-lb. single pein sledge hammers	2.56
2—Long handled round point shovels	2.80
1—7 point hand saw	1.90
1—12" ratchet brace	2.50
1—Set ¼" to 1" auger bits	3.80
1—Spirit level	1.25
1—24" carpenter's steel square	1.25
4—1" hand cold chisels	1.50
2—1" cape chisels	1.00
1—Pair 20" S L. blacksmith's tongs	88
1—Pair 20" C. L. blacksmith tongs	.88
2—Germantown rig builder's derrick hatchets	3.00
1—Single bit axe and handle	2.50
1—3-lb. ball pein hammer	4.50
1—No. 1A Toledo stock and die threads, 1" to 2" pipe	24.00
1—No. 2 Barnes three-wheel pipe cutter	4.00
6—Extra wheels for above	1.20
1—No. 7 Little Giant screw plate set	34.00
1—No. 3 combination bench and pipe vise	50.00
1—10" iron snatch block	12.00
1—No. 9 Star hacksaw frame	2.66
1Dozen star hacksaw blades	1.40
1—⅞"x18"x36" ship auger	3.75
1—1"x18"x36" ship auger	4.50
1—No. 2 Pratt's patent auger handle	2.25
100—Lbs. No. 4 babbitt	22.00
1—6" babbitt ladle	1.50
25—Lbs. 1-16" red rubber sheet packing	15.00
6—12" M. B. files	3.00
6—14" F. B. files	5.20
6—14" half round files	6.45
6—6" S. T. files	1.40
24—5" hay fork pullies	19.20
2—4-lb. hot splitting chisels	2.60
2—24" chisel handles	1.00
2—16-lb. wedge-point crow bars	5.00
1—100' Rival steel tape	7.50
1—3" elliptic flue cleaner	2.70
2—No. 4 zinc oilers	2.30
1—100-lb. bale white waste	25.00
4—5-lb. cans cup grease	4.00
1—50-lb. can common tallow	10.00
1—Bbl. steam cylinder oil	25.00
1—No. 33 portable blacksmith forge	36.00
600—Lbs. blacksmith coal	9.00
30—Ft. ¾" link log chain	10.00
1—12" telegraph wheel	1.00
1—150' telegraph cord	.75
1—No. 14 belt punch	.75
3—Prs. 12" belt clamps	3.30
80—Ft. ⅜" pipe for reverse lever	4.50
24—2" malleable ells	9.60
24—1" malleable ells	8.65
24—2" malleable tees	10.04
24—1" malleable tees	10.04
36—2" assorted nipples	6.40
36—1" assorted nipples	3.00
12—½" assorted nipples	1.33
12—2" plugs	1.58
12—Each 2", 1" and ½" lip unions	40.95
6—2"-1" bushings	.66
6—2" O. C. standard flange unions	10.56
12—Each 2", 1" and ½" globe valves	89.81
6—Each 2" and 1" stop cocks	25.08
400—Ft. 2" 1200-lb. test line pipe	88.00
200 Ft. 1" black merchant pipe	24.96
100—Ft. ½" black merchant pipe	6.52
1—Set never slips	7.00
Grand total cost complete string tools	$16,604.54

CHAPTER III

DRILLING NORTH TEXAS FORMATIONS

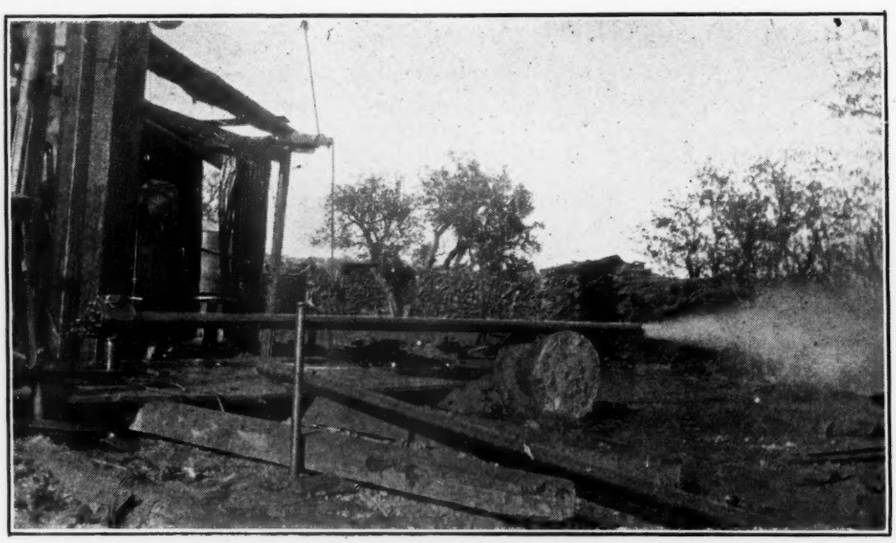
The Pennsylvanian formations of North Texas present no difficult problems in drilling. Very few cavey formations are encountered as long as the hole can be kept dry. When water sands are encountered it usually becomes necessary to run pipe or underream the last string of pipe in the hole through the water sand. A surprising amount of open hole can be carried as long as water is kept off of the sides of the hole. Near Mineral Wells, in Palo Pinto County, Owens & Wilson drilled their No. 1 Oaks to 4550 feet with only 2200 feet of 6⅝-inch casing in the hole, making a total of 2350 feet of open hole. This example is rather exceptional, but it is considered no feat at all in this area to have 1000 to 1500 feet of open hole ahead of the pipe.

When water sands are encountered they are usually drilled through and to the first lime shell beyond. The casing is then landed on this lime shell. The water is usually shut off with but very little trouble when the pipe is landed in this manner. It is very remarkable to a person coming from California to see the ease with which water is shut off in Texas. Cement and mudding-in of water sands seem to be entirely unnecessary.

It is customary, when the depth to the producing sand is known, to land a string of casing immediately above the point where the production is expected. This string of pipe cases off all of the open hole above the sand, and it is very desirable to do this whenever possible.

The tendency in North Texas up until lately has been to run entirely too long strings of lightweight pipe in the wells. As a consequence there is quite a good deal of collapsed pipe, and collapsed pipe in a hole presents the very worst type of fishing job.

With an idea of showing just how long a string of any size or weight casing can be run in a well the following table of collapsing pressures is given:



How Deep Can You Drill Without a Derrick?

Derricks and standard rigs are not absolutely necessary in the drilling of North Texas deep wells. Herewith is photo of No. 1 Veale of the Texas & Pacific Coal and Oil Company north of Ranger. This well was drilled to 3980 feet with a No. 30 Star drilling machine. The Roxana Petroleum Company made 3000 feet of 10-inch hole with a machine like this near Groford, Palo Pinto County. Near Mineral Wells, Owens & Wilson drilled their No. 1 Oaks to 4555 feet with a National drilling machine. However, long strings of pipe cannot be handled with this kind of equipment. On the left will be seen a control head capping the well. This type of valve is used almost universally for bringing wells under control.

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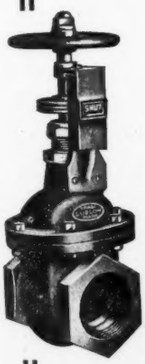
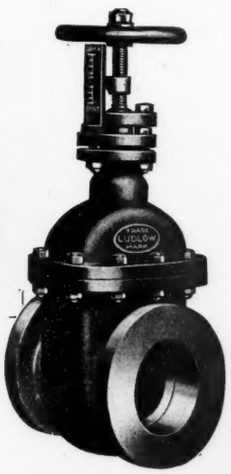
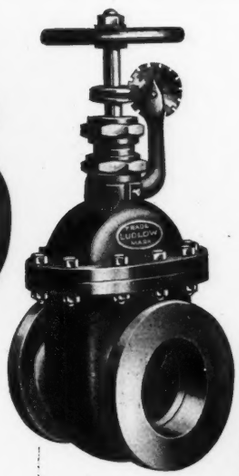
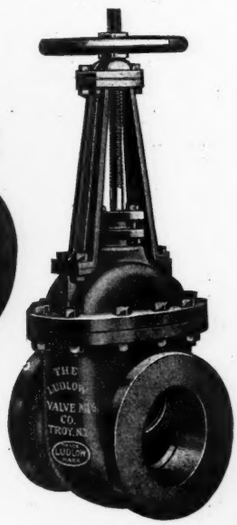
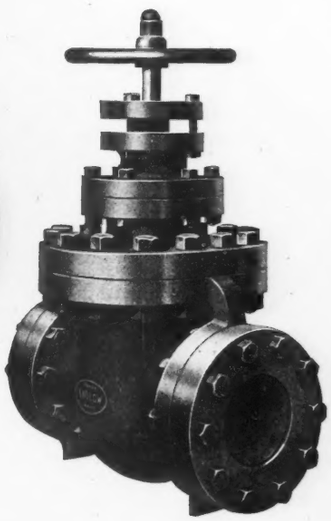


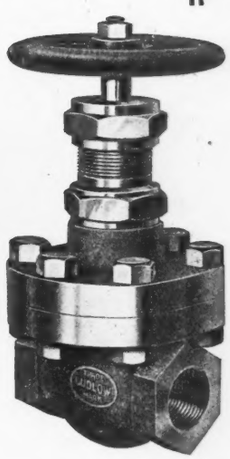






LUDLOW
HIGH PRESSURE
GATE and
CHECK VALVES





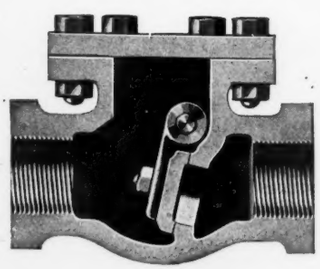


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Table Showing the Collapsing Pressures of Lap-Welded Steel Casing

Size inches	Weight per ft. pounds	Inside diameter inches	Outside diameter inches	Thickness inches	Collapsing pressure lbs. sq. in.	Equivalent water column in ft.	Using safety factor 2
4½	15.0	4.500	5.000	0.250	2944	6790	3395
5 3-16	**17.0**	**4.892**	**5.500**	**0.304**	**3404**	**7840**	**3920**
5 3-16	20.0	4.780	5.500	0.360	4285	9870	4935
5⅝	20.0	5.370	6.000	0.315	3160	7280	3640
6¼	20.0	6.000	6.625	0.312	2704	6230	3115
	26.0	5.845	6.625	0.390	3717	8560	4280
	28.0	5.775	6.625	0.425	4167	9600	4800
6⅝	20.0	6.437	7.000	0.281	2096	4830	2415
	24.0	**6.334**	**7.000**	**0.333**	**2741**	**6320**	**3160**
	26.0	6.312	7.000	0.344	2867	6600	3300
	28.0	6.220	7.000	0.390	3440	7930	3965
7⅝	26.0	7.390	8.000	0.305	1914	4410	2205
8¼	28.0	8.015	8.625	0.305	1680	3870	1935
	32.0	**7.935**	**8.625**	**0.345**	**2080**	**4790**	**2395**
	36.0	7.875	8.625	0.375	2383	5490	2745
	38.0	7.765	8.625	0.430	2928	6750	3375
	43.0	7.625	8.625	0.500	3638	8380	4190
9⅝	33.0	9.500	10.000	0.250	780	1800	900
10	**40.0**	**10.000**	**10.750**	**0.375**	**1638**	**3770**	**1885**
	48.0	9.850	10.750	0.450	2234	5150	2575
	54.0	9.750	10.750	0.500	2643	6090	3045
11⅝	40.0	11.437	12.000	0.281	641	1475	737
12½	40.0	12.500	13.000	0.250	402	927	463
	45.0	12.360	13.000	0.320	745	1717	858
	50.0	**12.250**	**13.000**	**0.375**	**1109**	**2560**	**1280**
13½	50.0	13.250	14.000	0.375	936	2160	1080
15½	51.3	15.416	16.000	0.292	314	724	362

The above table worked out on the following formula:

P equals 86670$\frac{t}{d}$ minus 1386 equals Collapsing pressure in lbs. per sq. inch

Where $\frac{t}{d}$ equals thickness, d equals outside diameter

The sizes of pipe in black face type in the above table are the sizes and weights most commonly used in North Texas. From this table the column entitled "using a safety factor of 2" is the one that should be used in figuring the length of a string of pipe that can be run to shut off water. The writer has seen this table tested out in quite a few instances. For example, using a safety factor of 2 for 6⅝-inch 24-pound pipe it will be seen that 3165 feet is the maximum amount that can be run without collapsing. An instance is known where 3760 feet of this casing was run in a hole full of water in order to make a shut-off, and when the hole was bailed down the casing collapsed at 3195 feet, just 30 feet below the calculated depth.

Recovering pipe from abandoned holes in North Texas is a relatively easy matter. It is quite a common thing to recover all of the casing. In producing wells it is customary to leave only the two smaller strings of casing in the hole and all of the larger pipe is removed. These larger strings of casing are usually removed before the well is drilled-in

Pulling Casing

In pulling casing great care should be exercised to see that too much strain is not put on the pipe suddenly. If this is done all of the tension is thrown into the top few joints and the pipe will part. If a very gradual tension is put on the casing elevators and the strain allowed to equalize throughout the length of the string of casing, it will usually come. If it does not come this way, a considerable amount of tension can be taken, the slips set in the spider, and the strain left on for several hours. This usually loosens the pipe in the stuck place. Judgment has to be exercised to know how much tension to take in a string of pipe. Almost all of the old experienced pipe pullers go by the rule that a string of pipe will give one inch in tension for every hundred feet of length. In other words, for a string of pipe 2000 feet long it will be found that the casing elevators will rise above the derrick floor 20 inches before the casing shoe will leave bottom.

This simple rule is often used to tell at just what point in the hole a string of pipe is frozen. It is customary if only 10 inches of tension is gotten to conclude that the pipe is frozen at 1000 feet. This information proves very valuable at times.

Very few people realize the enormous pulling power of the ordinary chain-driven calf wheel pipe handling device such as is in common use in North Texas, using an ordinary 12"x12" drilling engine, which is supposed to develop about 30 horsepower engines have a 30-inch pulley which drives a 10-foot bandwheel hence the engine's power at the bandwheel is multiplied four times. This bandwheel has on the same shaft with it a 42-inch sprocket for No. 1030 chain. This gives a further multiplication of four times. This sprocket drives an 84-inch diameter sprocket on the calf wheel, which multiplies the power 2 times. The casing line on the calf wheel pulls from a 16-inch shaft which again multiplies the power 5.25 times. The casing line is strung through a 4-sheave block affording 9 lines, which multiplies this last power by nine. Hence the power as developed on the 30-inch pulley of the steam engine is multiplied as follows:

4x4x2x5.25x9 equals 1512 times

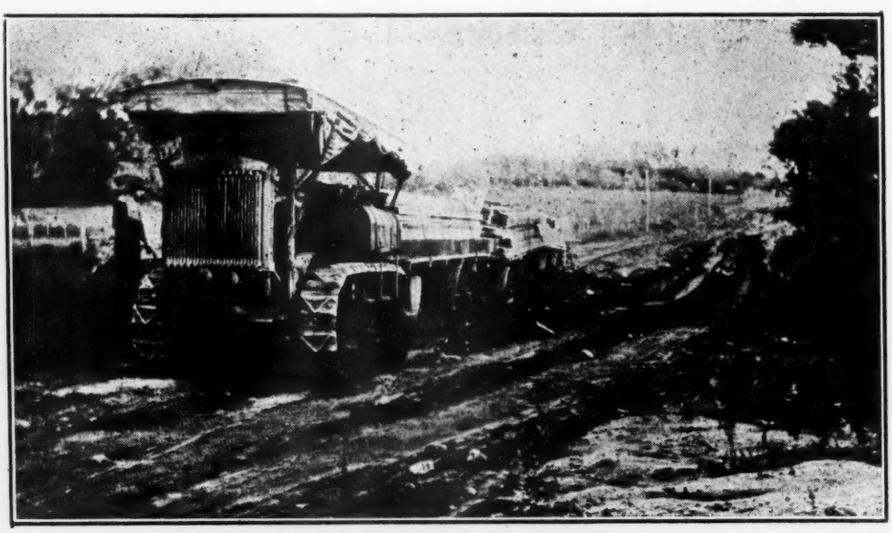
If the derrick would stand it, it is quite possible that a load of 2000 tons could be picked up with this device.

If a string of pipe will not pull by ordinary methods—that is, by making a straight pull on it from the calf wheel and using a casing block having four sheives, hydraulic jacks are usually inserted under the spider. These jacks usually lift 100 tons each. The tension in the pipe is taken up with the jacks and a trip spear is then run down inside the casing on the tools and a hold taken at the point where the pipe is believed to be frozen. The tools are then started with a "jar-up" motion and the casing is lifted with the jacks. For doing work of this kind it is well to have a rather deep cellar so that the jacks and spider can be kept below the level of the derrick floor. The above outlined procedure will usually free an ordinary string of frozen casing. If it does not, it may be that the spear is jarring at the wrong place, and the hold is broken and the spear reset at some other point in the casing and the operation repeated.

CHAPTER IV

THE DRILLING OF THE WELL

The first drilling operation on a well in North Texas is known as "spudding." The common practice at the present time is to "spud in" with a wire line of either ¾-inch or ⅞-inch diameter. They use about 100 feet of 2¼-inch manila cable for a jerk line connecting the crank arm with the spudding line. Spudding with a wire line was formerly considered hard on a rig, but with the heavy rig now being used this is not noticed. Spudding with a wire line has been made almost necessary of late due to the scarcity and high price of manila line,



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During the first eight months of 1919 the roads of Stephens, Eastland and Comanche Counties have been next to impassable most of the time. A caterpillar tractor as here shown, with six or seven two-ton loads hitched on behind it, will go anywhere on any kind of roads; or if there aren't any roads go just the same. While the operators are listening to the fairy tales of the good roads committees, they will do well to "lay in" a few of these tractors if they expect to keep their rigs running.

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and one sees very little of the manila line in use for drilling purposes.

It is customary to "spud" in North Texas for a considerable depth, sometimes as deep as 400 feet. Then the tools are "hitched on" to the temper screw and the regular drilling operation starts with the walking beam furnishing the drilling motion. Some operators do not use drilling jars in the big hole unless the formation seems to "mud" the tools up, causing them to stick. Almost all of the operators use a swivel socket of some make with the wire line.

At the present time almost all of the operators are using a ⅞-inch diameter steel drilling line made up of 6 strands of 19 wires each, with a hemp center. This size is used until the 8-inch hole is reached, and by some it is used until the well is finished. Some operators, of late, have started using a ¾-inch diameter 6x19 line in 8-inch and smaller hole. This effects quite a saving in cost, and at the same time better drilling progress is made, as the line has more spring with the light tools used in the small hole. Hence using the smaller line the driller is better able to tell how his tools are working.

There are only three kinds of formations encountered in North Texas above the black shale of the Bend. They are: gray lime, blue shale and sand. The lime and shale drill very nicely, but the sands give trouble. In the first place the sharp sand cuts the bits and they soon get out of gauge. Unless the bits are taken off frequently and dressed, "tight hole" results, and when the casing is run it usually hangs up in these places. "Flat" and crooked hole is often made in water sands.

Underreaming

When pipe is picked up to underream through these sands, it will be found that the sand cuts the cutting edge off of the underreamer lugs very fast. By dressing the lugs out just as far as possible and still have them go down the pipe, and being extremely careful with the temper, it will be found that less dressing will be necessary and more progress can be made.

Dressing Underreamer Cutters

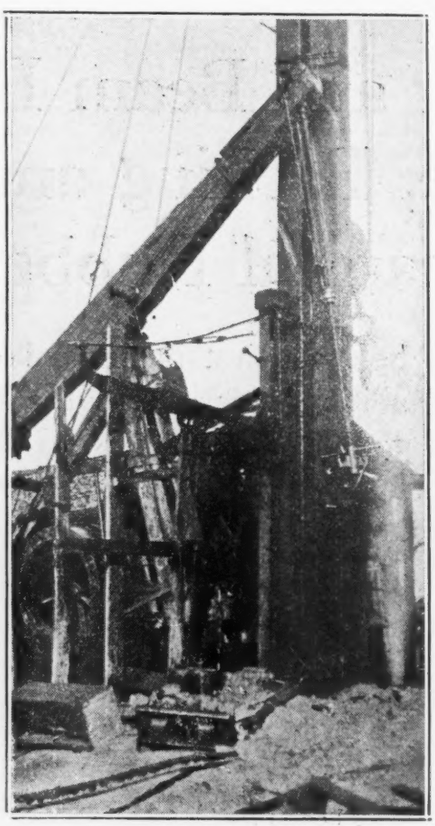
The Union Tool Company gives the following instructions relative to the proper dressing and tempering of underreamer cutters:

To Dress Cutters.—Bring slowly to an orange heat, which is about 2000 degrees Fahrenheit, and do not forge below a red heat, plainly visible in daylight. The heel of every cutter in dressing must be kept parallel with the cutting edge, or in other words, have the bottom of the cutter straight across, which is the shape or form of all new cutters. If cutting edge is stove back of the heel, the cutters will wedge on the tongue crushing same, the result being efficiency greatly decreased. After dressing cutters allow them to cool to hand warm before reheating for tempering.

To Temper Cutters: Heat slowly and evenly to 1450 or 1500 degrees Fahrenheit, which is indicated by a cherry red; then dip about half an inch of the cutting edge into clear water, stirring the cutter around so as to keep the water in close contact with its surface. Allow the cutter to remain until the cutting edge is cool, then quickly dip the cutter halfway into water to prevent a check forming between the relatively hot and cold parts. Polish the cutting edge to observe the color and when it has run down to a straw color on the edge, set the cutter in about one inch of water or a bath of mud and allow to cool slowly.

It is becoming common practice in California to take underreamer cutters after they have been dressed and melt some cast iron onto the cutting edge with a blow torch. They find that the cutters will go quite a good deal longer this way before they need dressing. Texas operators should adopt this simple method of treating the cutting edge in order to get more service out of their cutters, especially in view of the fact that a set of cutters for a 10-inch Union underreamer now cost in the neighborhood of $90.

Very little 12½-inch or larger pipe is underreamed in North Texas. The 10-inch and 8¼-inch are underreamed usually with Union or Wilson underreamers, while the favorite underreamer for underreaming 6⅝-inch casing is the Swan. One should be very careful to see that the cutters for these underreamers are for the exact weight of pipe which he intends to underream.



The T. & P. Coal & Oil Co.'s No. 1 Veale, finished without a derrick, with a Star machine. It is shown here as a gasser, before it was shot.

Drilling in the Black Lime

The drilling in the bottom of most of the wells drilled in North Texas is in the black lime formation. At Ranger they usually have a couple of hundred feet of black lime. Wells drilled in other localities have been known to have as much as 750 feet of it. The hardness of this formation, coupled with the difficulty of making hole in it, is the talk of North Texas. However, one keen observer has remarked that when the companies start to paying the contractors by the foot to drill it instead of by the day, as at present, this will probably "soften the black lime up considerably."

One well with which the writer is very familiar drilled 600 feet of black shale and 750 feet of black lime in 50 days drilling time. The black lime in this well was extremely hard in places. This well was drilled with company tools.

Advantages of Accurate Samples

In North Texas drillers are prone to disagree as to the proper name for formations in which they are drilling. For instance, one driller will say that he is in gray sandy lime, and the driller working on the other tower will log the same formation as gray limey sand. One will log black lime where another will log black slate or chert. It is quite common for one driller to log a shale as blue where another driller would log its color as black. This leads to quite a difference in appearance of logs of wells drilled close together, and geologists and others engaged in working out sub-surface conditions are often misled.

The only way in which to settle questions of this kind is to require that samples be furnished every few feet, or at least for every change in formation. Contractors will invariably offer strenuous objection to furnishing samples, and some drillers do not like to slow down the work for the length of time necessary to get the samples. However, to companies drilling outside of the proven areas it is absolutely essential that these samples should be kept, and more and more stress is being laid on this as time goes on. Quite often the trouble and expense of drilling another well may be saved by having an accurate sample of each of the sands drilled through. Sand samples also tell one as to whether it would pay to shoot a well and as to how heavy a charge of nitroglycerine will be needed.

Possibly the greatest objection to the contract system of drilling lies in this one feature. A contractor who is getting so much per foot for making hole is going to slight any operation which tends to delay the drilling progress. On isolated tests, where shutdowns and fishing jobs are extremely numerous (locations on which samples are always particularly desired) this will be particularly true.

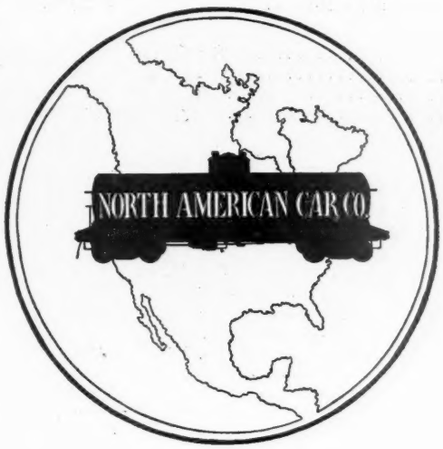
CHAPTER V

COST OF DRILLING WELLS IN NORTH TEXAS

The cost of completing a test in North Texas varies with the area in which the test is being drilled, the depth to the producing sand, the amount of underreaming which has to be done, the amount of black lime that has to be drilled through and numerous other things.

Operating companies find that they save but little in the long run by operating their own tools, and for this reason the contract price of drilling is used as a basis in making up estimates of cost. Below are given a few examples of detailed estimates of cost of completed wells.

TANK CARS



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Cost of a Well at Ranger

1—84'x22' sway braced standard rig with 6" Ideal rig irons.....		$ 4,500.00
Drilling—		
3200' at $3.00 per foot	$ 9,600.00	
200' black lime at $10.00	2,000.00	
15 days underreaming at $100.00	1,500.00	
5 days shut down at $70.00	350.00—	13,450.00
Fuel and Water—		
60 days gas at $15.00	$ 900.00	
Water service	300.00—	1,200.00
Freight and hauling		1,000.00
Tanks, flow lines, etc.		3,000.00
Casing—		
350' of 15½" 70-lb. casing	$ 1,862.00	
800' of 12½" 50-lb. casing	2,648.00	
1400' of 10" 40-lb. casing	3,430.00	
2000' of 8¼" 32-lb. casing	3,960.00	
3200 ' of 6⅝" 24-lb. casing	4,576.00—	16,476.00
200-quart shot of nitroglycerine		920.00
Add 10 per cent for unforseen expenses		4,055.00
Grand total		$44,601.00
Less probable salvage for producing well		6,352.00
Net cost of producing well		$38,249.00
Less additional salvage if dry hole		9,829.00
Net cost of dry hole		$28,420.00

Estimated Cost of Well in Desdemona Field

1—84'x22' sway braced standard rig with 6" Ideal rig irons.....		$ 4,800.00
Drilling—		
2700' at $4 per foot	$10,800.00	
150' black lime at $10.00	1,500.00	
10 days shut down at $75.00	750.00—	13,050.00
Fuel and Water—		
50 days gas at $15.00	750.00	
Water service	400.00—	1,150.00
Freight and hauling		1,600.00
Tanks, flow lines, etc.		3,000.00
Casing—		
800' 12½" 50-lb. casing	$ 2,648.00	
1400' 10" 40-lb. casing	3,430.00	
2000' 8¼" 32-lb. casing	3,960.00	
2700' 6⅝" 24-lb. casing	3,861.00—	13,899.00
200-quart shot of nitroglycerine		920.00
Add 10 per cent for unforseen expenses		3,842.00
Grand total		$42,261.00
Less probable salvage for producing well		4,863.00
Net cost of producing well		$37,398.00
Less additional salvage if dry hole		9,257.00
Net loss if dry hole		$28,141.00

Estimated Cost of Well in the Breckenridge Field

1—84'x22' sway braced standard rig, with 6" Ideal rig irons, California pattern		$ 5,100.00
Drilling—		
3200' drilling at $5.00 per foot	$16,000.00	
25 days underreaming at $100.00	2,500.00	
15 days shut down at $75.00	1,125.00—	19,625.00
Fuel and Water—		
80 days gas at $15.00	1,200.00	
Water service	650.00—	1,850.00
Freight and hauling		2,700.00
Tanks, flow lines, etc.		3,000.00
Casing—		
350' 15½" 70-lb. casing	1,862.00	
800' 12½" 50-lb. casing	2,648.00	
1400' 10" 40-lb. casing	3,430.00	
2200' 8¼" 32-lb. casing	4,356.00	
3100' 6⅝" 24-lb. casing	4,433.00—	16,729.00
200-quart shot of nitroglycerine		920.00
Add 10 per cent for unforseen expenses		4,920.00
Grand total		$54,844.00
Less probable salvage for producing well		6,352.00
Net cost of producing well		$48,492.00
Less additional salvage for producing well		10,031.00
Net loss if dry hole		$38,461.00

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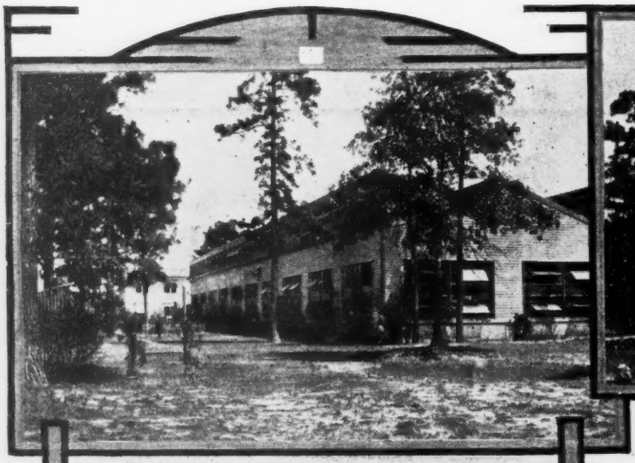
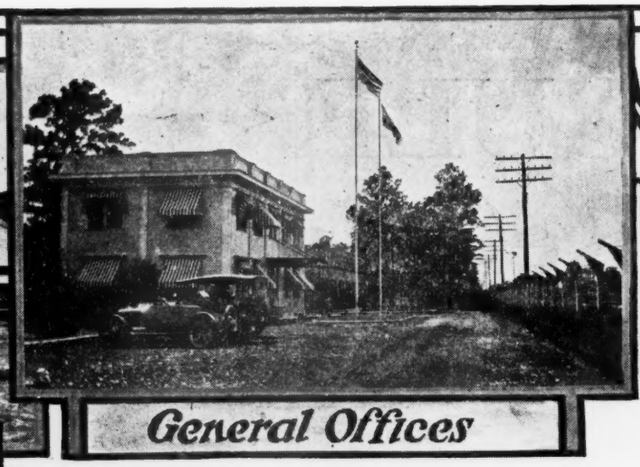
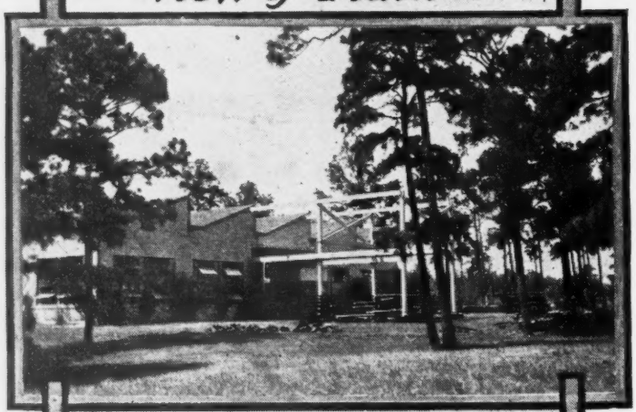


View of Plant



General Offices



Another View of Plant

Bunk-houses where Employees get free room and beds-

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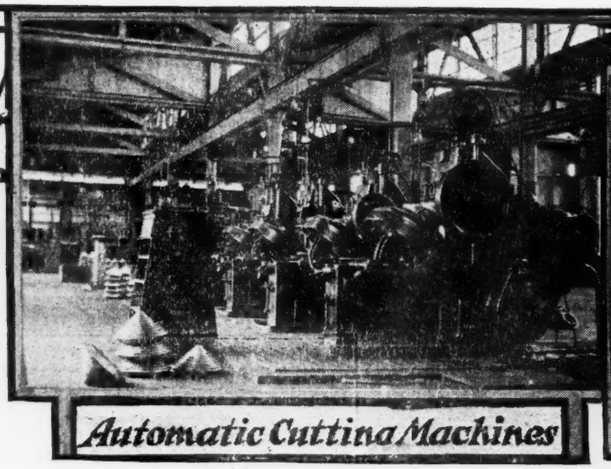
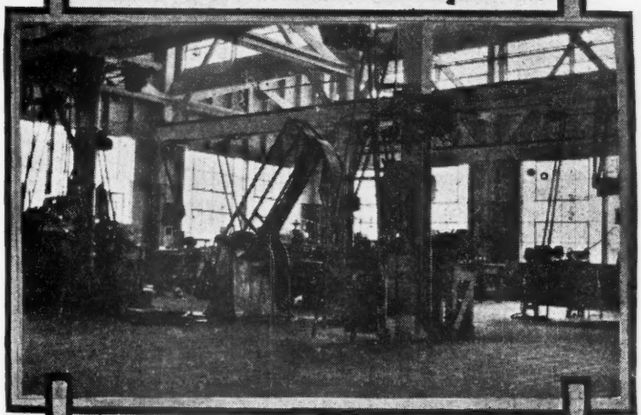
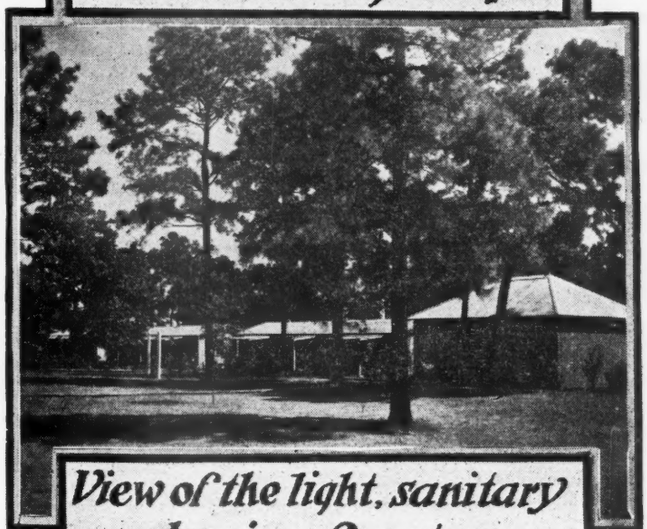


Automatic Cutting Machines

Another Machine Shop View



Another View of Shop



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Texas

Estimated Cost of Well in the Caddo Field

1—84'x22' sway braced standard rig with 6" Ideal rig irons, California pattern		$ 5,000.00
Drilling—		
3200' drilling at $4.50 per foot	$14,400.00	
12 days underreaming at $100.00	1,200.00	
12 days shut down at $75.00	900.00—	16,500.00
Fuel and Water—		
60 days gas at $15.00	900.00	
Water service	500.00—	1,400.00
Freight and hauling		3,400.00
Tanks, flow lines, etc.		3,000.00
Casing—		
350' 15½" 70-lb. casing	1,862.00	
800' 12½" 50-lb. casing	2,648.00	
1400' 10" 40-lb. casing	3,430.00	
2200' 8¼" 32-lb. casing	4,356.00	
3100' 6⅝" 24-lb. casing	4,433.00—	16,729.00
200-quart shot of nitroglycerine		920.00
Add 10 per cent for unforseen expenses		4,695.00
Grand total		$51,644.00
Less probable salvage for producing well		6,352.00
Net cost of producing well		$45,292.00
Less additional salvage if dry hole		10,031.00
Net loss if dry hole		$35,261.00

Estimated Cost of Well in Northern Stephens County or Southern Young County

1—84'x22' sway braced standard rig with 6" Ideal rig irons, California pattern		$ 4,700.00
Drilling—		
3400' drilling at $5.00 per foot	$17,000.00	
600' black lime at $10.00 per foot	6,000.00	
40 days underreaming at $100.00	4,000.00	
30 days shut down at $75.00	2,250.00—	29,250.00
Fuel and Water—		
1500 cords wood at $5.00	7,500.00	
Water service	1,000.00—	8,500.00
Freight and hauling		2,000.00
Tanks, flow lines, etc.		3,000.00
Casing—		
300' 20" 90-lb. casing	2,160.00	
700' 15½" 70-lb. casing	3,724.00	
1200' 12½" 50-lb. casing	3,972.00	
1700' 10" 40-lb. casing	4,165.00	
2400' 8¼" 32-lb. casing	4,752.00	
3100' 6⅝" 24-lb. casing	4,433.00	
4000' 5 3-16" 17-lb. casing	4,080.00—	27,286.00
200-quart shot of nitroglycerine		920.00
Add 10 per cent for unforseen expenses		7,566.00
Grand total		$83,222.00
Less estimated salvage for producing well		15,217.00
Net cost of producing well		$68,005.00
Less additional salvage if dry hole		10,612.00
Net loss if dry hole		57,393.00

Note.—This estimate will be found fairly accurate for wells drilled in eastern Callahan and Shackelford Counties.

Estimated Cost of Well in Palo Pinto County
(Mineral Wells Area)

1—84'x22' sway braced standard rig with 6" Ideal rig irons, California pattern		$ 4,500.00
Drilling—		
3800' of drilling at $3.50	$13,300.00	
700' black lime at $10.00 per foot	7,000.00	
20 days shut down at $75.00	1,500.00—	21,800.00
Fuel and Water—		
90 days gas at $15.00	1,350.00	
Water service	1,000.00—	2,350.00
Tanks, flow lines, etc.		3,000.00
Freight and hauling		1,600.00
Casing—		
350' 15½" 70-lb. casing	1,862.00	
800' 12½" 50-lb. casing	2,648.00	
1100' 10" 40-lb. casing	2,695.00	
2800' 8¼" 32-lb. casing	5,344.00	
3800' 6⅝" 26-lb. casing	6,460.00	
600' 5 3-16" 17-lb. casing	612.00—	19,2610.0
200-quart shot of nitroglycerine		920.00
Add 10 per cent for unforseen expenses		5,379.00
Grand total		$59,170.00
Less estimated salvage for producing well		5,764.00
Net cost of producing well		$53,406.00
Additional salvage for dry hole		13,933.00
Net loss if dry hole		$39,473.00

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The Value of Estimates of Cost of Wells

From the foregoing tables of cost it will be seen that there are several items of cost which will vary greatly for individual wells. For instance, where operations are being carried on with company tools instead of by contract, the cost of drilling may be considerably under or over the contract price, depending on the efficiency of the work and the luck you have in avoiding fishing jobs. Also, depending on the location and the weather, the cost of hauling pipe will vary considerably for individual wells. The North Texas roads are the worst imaginable in wet weather, and in making up estimtaes the worst of conditions must be taken into account.

Pipe jobs and fishing operations will run the cost of wells up enormously. For instance, in Young County, where a producing well should not cost over $68,000 according to the estimate, there are several wells as yet not completed (but all below 4000 feet in depth) which have cost their owners upwards of $100,000 apiece. No estimates can take into consideration the most extreme conditions.

It is hoped that these figures will be of value principally in giving the public a general idea of the cost of operating in North Texas. Of course, all of the larger companies keep detailed cost sheets showing the cost of drilling wells, but these figures are very seldom given to the public.

Initial Production Necessary for Well to Pay Out

Some very reliable statisticians estimate that of all the wells so far drilled in the Pennsylvania area of North Texas only about 50 per cent have produced oil in paying quantities. Hence, considering operations as a whole, from a financial standpoint, it will be seen that the producing wells have to shoulder quite a burden of expense in order to carry the expense of the non-productive tests.

For instance, assuming that 600 wells have been completed in the Pennsylvanian area to date, at an average cost of $40,000 each, or a total cost of $24,000,000, it will be seen that 300 producing wells will have to stand the burden of this expense in figuring the net profits of the operation as a whole. This would put a charge of $80,000 against each well. At $2.25 per barrel, this means that each well must produce, over and above production cost and royalty, 35,555 barrels of oil. It would take a 200-barrel well 178 days to produce this much oil. At the ordinary rate of decline for North Texas wells, and taking into account the operating expense and royalty deduction, it is believed by many competent operators that a well costing $80,000 would have to "come in" at 250 barrels per day or better to ever pay out and show an ultimate profit on the books.

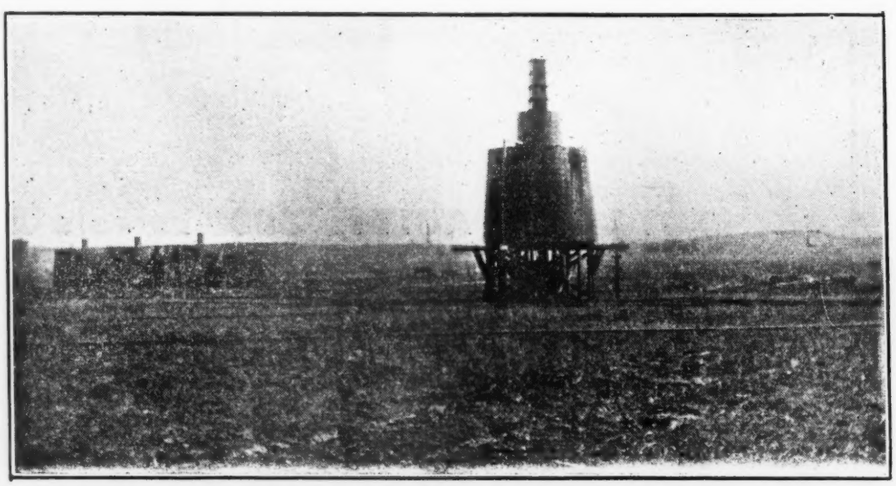
CHAPTER VI

METHODS OF HANDLING PRODUCING WELLS

When the last string of casing has been landed above the oil sand preparations are made for "bringing in" the well. A control head as manufactured by the Oilwell Improvements Company is usually fitted to the top of the casing. With the control head installed, drilling can proceed as before, but immediately that oil or gas is encountered the well can be closed in. The "flapper valve" of the control head has a round notch in it which permits the closing in of the well with the tools in the hole, as the drilling cable slips into the notch. Connections are made from the side of the control head to the flow tank or gas trap. After oil is encountered, if it is desired to continue drilling for a better production an oil saver is installed in the top of the control head. This permits drilling operations to continue without the loss of any production.

At Ranger and Desdemona, in some of the larger wells drilled, where large quantities of gas are encountered, the tools have been left suspended in the hole, suspended through the oil saver. The idea here is to keep the tools on or near bottom, so that cleaning out or deepening operations can be carried on if necessary. If the tools should be removed from the hole, great difficulty would be experienced in running them in again against the heavy flow of oil or gas.

The oil and gas coming from the well is usually piped first to a settling or separating tank. The most common tank of this kind in use in North Texas at present is the "gun barrel" tank as shown in the accompanying illustration. This is nothing more or less than a 200-1000 barrel wooden tank elevated above the ground about 12 feet, and with a tower built in the top.



Gun Barrel Flow Tanks

The above photo shows the familiar "gun barrel" flow tank as commonly used in North Texas. On the left will be seen the accompanying battery of four 1600 barrel wooden storage tanks. This type of flow tank is doomed to go, as it does not conform with Rule No. 21 of the Texas State Railroad Commission relative to separating devices. The above tanks are located at the famous No. 1 Norwood well west of Ranger.—Photo, courtesy Early Deane.

The oil and gas flow into this tank and the gas escapes into the air through the tower. Every one who has visited the North Texas fields has noticed the heavy vapors escaping from these "gun barrel" tanks. Analyses of these gases has shown them, in some instances, to be as rich as 5 gallons of gasoline per 1000 cubic feet of gas. From a well making several million cubic feet of gas per day, it is easily seen that an enormous amount of gasoline goes to waste, not to mention the waste of the gas itself.

Recently some of the larger companies are installing separators or gas traps at Ranger. In this installation the oil and gas flow into the separator, photos of which are shown herewith. These separators make a perfect separation of oil and gas and, depending on the pressure carried on the separator and other factors, they furnish a dry gas which can be used for firing boilers or other purposes, or a rich gas which can be run through casinghead gasoline plants and the gasoline recovered. At Ranger, at present, Chestnut & Smith are installing these separators and piping the gas from them to their large casinghead gasoline plants.

The Smith separator, as sold by Chestnut & Smith and as here illustrated, is sold complete ready for the well to be connected to it. Two or three men can easily connect one up in two days' time. A 5 feet by 16 feet separator will take care of a well making as high as 5000 to 6000 barrels of oil and 10,000,000 to 15,000,000 cubic feet of gas per day, a perfect separation of oil and gas being made. They cost about $1650 each f. o. b. Ranger. They are designed to withstand a hydrostatic pressure of 80 pounds per square inch. The regulators on this tank regulate absolutely the level of the oil in the separator no matter whether the well is flowing by heads or steadily. When the fluid reaches this certain level the regulator opens a valve and the gas pressure forces the oil to the storage tanks.

The "Gun Barrel" Tank a Violation of Rule No. 21

The recently issued Rule No. 21 of the Texas Railroad Commission relative to separating devices reads as follows:

"Where oil and gas are found in the same stratum and it is impossible to separate the one from the other, the operator shall upon being so ordered by the Railroad Commission of Texas, install a separating device of approved type, which shall be kept in place and used as long as necessity therefor exists, and after being installed such device shall not be removed, nor the use thereof discontinued, without the consent of the Railroad Commission of Texas."

According to a strict interpretation of this ruling it will be unlawful before long to use in North Texas the "gun barrel" type of settling tank wherein great quantities of gas and gasoline are allowed to float off into the air, thereby entailing a great economic loss as well as creating an extremely great fire hazard. Some of the most disastrous fires and explosions in the history of oil fields have been caused by the gas from wells being allowed to escape freely into the air.

From the "gun barrel" tank the oil gravitates to a battery of storage tanks as shown in the accompanying photograph. The oil from the separators, or gas traps, also flows to a like battery. These are either wooden or steel tanks and from 1600 to 2000 barrels capacity each. They are ordinarily erected in batteries of four, and it is considered very good practice to house in the batteries, as the hot sun beating directly on storage tanks containing oil of this

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quality causes quite an evaporation of the lighter constituents.

CHAPTER VII.

SHOOTING OF NORTH TEXAS WELLS

It is getting to be standard practice in North Texas to shoot wells drilled into the black lime, whether or not they show for anything when drilled. The No. 1 Carey of the Mid-Kansas Oil & Gas Company at Caddo, was rated as a very small well until it was shot with 400 quarts of nitroglycerine. After the shot it produced as high as 12,870 barrels per day. The No. 1 Manning well of the Sinclair Gulf Company at Caddo was reported as absolutely dry when drilled in. This well was shot with 400 quarts of nitroglycerine using 4½-inch shells, and it started off at 400 barrels per day.

The extensive shooting of wells in this area has created such a demand for nitroglycerine that the companies are kept busy filling orders. At present there are five nitroglycerine companies engaged in this work. The standard price for nitroglycerine shots is as follows:

10 Quarts and under	$ 66.00
20 Quarts	112.00
30 Quarts	158.00
40 Quarts	204.00
50 Quarts	250.00
60 Quarts	296.00
80 Quarts	388.00
100 Quarts and over, per quart	4.60
Minimum charge for 10 quarts and under	66.00
Electric wire, per foot	5c

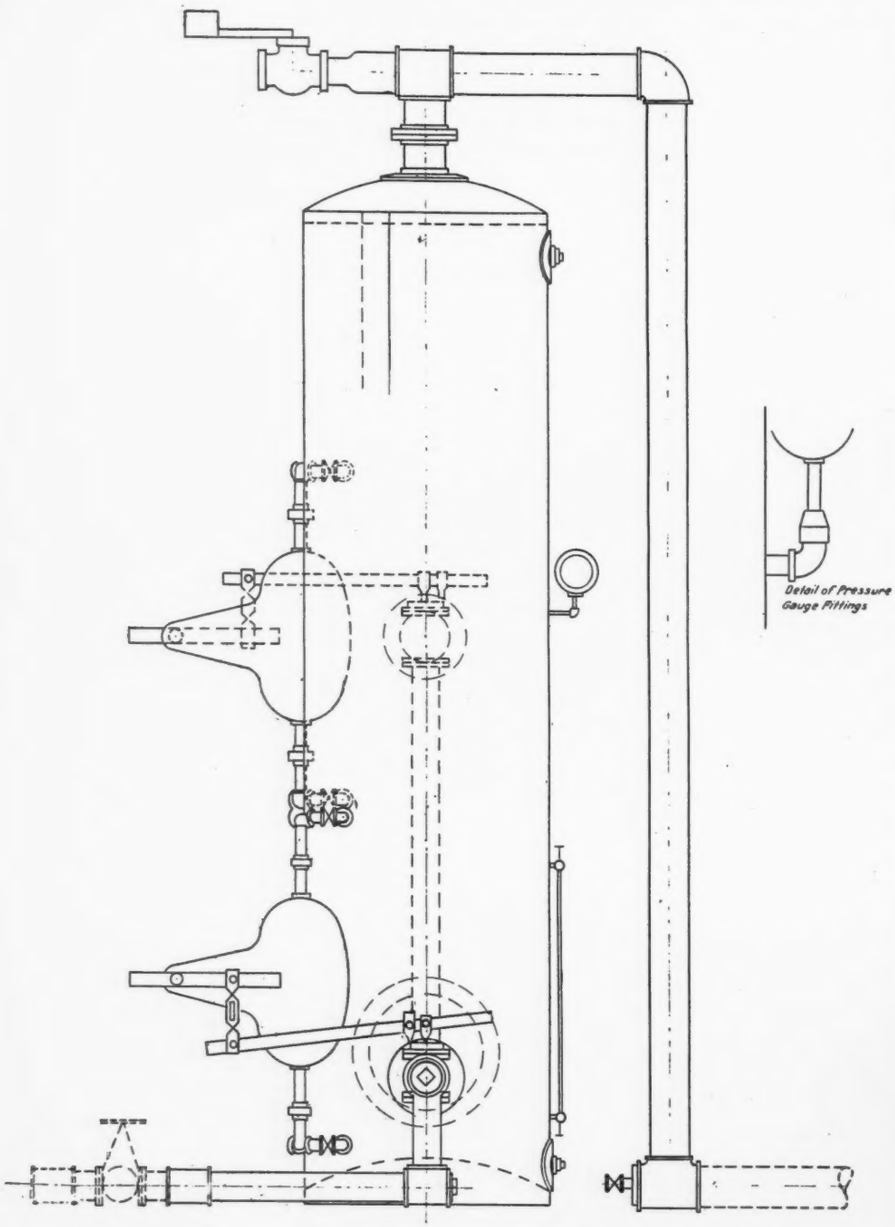
It is customary, when desiring to make a very heavy shot in the back lime, to use a 5-inch diameter shell extending for the distance representing the thickness of the lime or sand it is desired to shoot. Some small shots using 2" and 3" diameter shells are used, but it is the opinion of competent shooter that operators waste their money in using shells of this small diameter.

It is impossible to compute with any accuracy the amount of force expended underground by shots of different sizes, and operators are governed more by custom than anything else in deciding as to the best method of shooting and the amount of charge. Some operators shoot with a cushion of about 100 feet of water on top of the shot, while others prefer upwards of 1000 feet of water on top of the explosive. There are quite a few instances known where shots have been set off with the hole completely filled with water. Very good success is gotten in this manner.

In shooting, the lowermost string of casing should be pulled up so that the bottom of the casing is at least 400 feet above the top of the water placed above the shot. It has been found that if the water cushion is allowed to extend up into the casing, the force of the shot will burst the casing at a point opposite the level of the top of the water. The only exception to this is where the hole is completely filled with water, and in this case the water simply "boils" over when the shot goes off. For small shots of around 100 quarts it may not be necessary to raise the casing further than 100 feet above the top of the water cushion; and for shots of 500 quarts or more it is customary to remove the inner string of casing entirely.

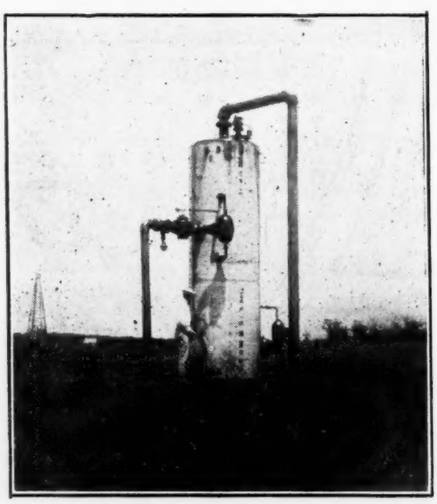
Nitroglycerine Shots Exploded Due to Earth Temperature

The ordinary method of setting off a charge of nitroglycerine is with a "go devil" squib or a bumper squib. Instances are known in North Texas where considerable difficulty has arisen in trying to get shots exploded. The nitroglycerine companies made a very interesting discovery in connection with the shootoing of North Texas deep wells which have been drilled into the black lime. They have found that in any well over 3200 feet deep the temperature of the earth at depth is sufficient to cause the nitroglycerine to explode spontaneously. Quite a few instances are known where wells have "shot themselves." The length of time which it takes a shot



THE SMITH SEPARATOR

For separating oil and gas from flowing wells. A separator as illustrated will handle 5000 to 6000 barrels of oil per day and 10,000,000 to 15,000,000 cubic feet of gas. This type of separator complies with Rule No. 21 of the Texas Railroad Commission relative to the conservation of oil and gas.



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Below is given a tabulation showing theany amount of hole, depending on the size amount of nitroglycerine required to shootof shell used:

Total Length of Twenty Quart Shells

(Figured to the nearest half foot)

Diam. ins.	1 shell	2 shells	3 shells	4 shells	5 shells	6 shells	7 shells	8 shells	9 shells	10 shells
2	31' 6"	63	94.5	126	157.5	189	220.5	252	283.5	315
2½	20' 1"	40	60.5	80.5	100.5	120.5	140.5	160.5	181	201
3	12' 9"	27.5	41	55	69	82.5	96.5	110	124	137.5
3½	10' 2"	20.5	30.5	40.5	51	61	71	81.5	91.5	101.5
4	7' 11"	16	24	31.5	39.5	47.5	55.5	63.5	71.5	79
4¼	7' 9"	14	21	28	35	42	49	56.5	63.5	71
4½	6' 4"	12.5	19	25.5	31.5	38	44.5	50.5	57	63.5
4⅞	5' 5"	11	16.5	21.5	27	32.5	38	43.5	49	54
5	5' 2"	10.5	15.5	20.5	26	31	36	41.5	46.5	51.5
5¼	4' 9"	9.5	14.5	19	24	28.5	33.5	38	43	47.5
5½	4' 4"	8.5	13	17.5	21.5	26	30.5	34.5	39	43.5
5¾	4' 1.7"	8	12	16.5	20.5	25	28.5	33	37	41
6¼	3' 6.5"	7	10.5	14	17.5	21	25	28	32	35.5
7	2' 11.6"	6	9	12	15	18	21.5	24.5	27.5	30.5

to go off spontaneously varies with the glycerine used and with the depth of the hole. Wells have been known to "shoot themselves" at Ranger in 72 hours, and the shortest time known at Breckenridge has been 54 hours. The No. 1 Ledbetter well of the Sinclair Gulf Company at Caddo had a charge of 400 quarts of nitroglycerine exploded spontaneously after the shooter had made quite a few unsuccessful attempts to explode the charge with a squib. The deepest well ever shot with nitroglycerine in North Texas, namely, No. 1 Seaman of the Roxana Petroleum Company, in Palo Pinto County, had a charge of 380 quarts, placed from 4100 to 4250 feet, exploded spontaneously due to earth temperature in about 30 hours.

It is well known by scientists that the temperature of the earth increases about one degree Fahrenheit for every 55 feet of depth below the surface. This would give an increase of about 73 degrees in a 4000 foot hole. If the mean temperature on the surface was 70 degrees Fahrenheit, this would mean that the bottom of a 4000-foot test would have a temperature of about 143 degrees Fahrenheit. It is the opinion of several experienced operators in North Texas, however, that temperatures in the 4000-foot tests drilling in the black lime are far in excess of 143 degrees, possibly due to chemical action within the black lime or other causes. It is noticed that the drill mud coming from the bottom of a 4000-foot hole in the bailer is so hot ordinarily that one cannot touch it with the bare hand with any degree of comfort. This would indicate a temperature of around 160 degrees Fahrenheit. Wells making gas, however, will not show this temperature phenomenon, as the gas coming into the hole under pressure and expanding gives a refrigerating action which cools off the bottom of the hole.

REGULAR OLD GULF LUCK

And the bones showed seven up! Such is luck. When Dock Oldham, purchasing agent for the Gulf Production Company, the Gulf Pipe Line Company and the Gulf Refining Company of Louisiana, as the result of a practical joke framed by General Manager Hoover of the Lucey Manufacturing Company up at Chattanooga last spring, found himself on the way to the Chatttanooga howsgow (same being polite name for cooler), Dock suddenly remembered the damning evidence in his pocket. In eased his hand, out flipped the damning evidence, falling noiseless in the grass.

Four hours later, after the joke had been sprung and Dock and his two friends in captivity had been released to set 'em up to the crowd, Dock remembered his magic black bones. Accompanying picture shows Dock in posture of finding said bones at 10 p. m. one dark Chattanooga night. We promised Dock we would follow him with a camera and shoot him when he found 'em, so he put one over us and found 'em with a flashlight. But we have the last laugh, thanks to the new cartoonist of the old blew devil. And look what Dock rolled when he put one by the dicks. Seven up! No wonder Lew Childs had a headache the next morning!

ONE ON THE GEOLOGIST

A certain South Texas geologist who is noted almost as much for his absence of mind as he is for his ability to get wells for his company—an the notoriety on both is considerable—tells the following story on himself:

Some time ago his wife, who is a steady church-goer and who had been trying to get him to go to church for a long time, finally decided that he must go to church. It was a Sunday morning, and he was reading a geological paper that interested him very much and didn't much want to go.

Finally, however, in answer to her protests, he got up and started out of the room to go to church. "Get your coat," she called to him, and he reached over on the bed and picked up "the coat."

He had gotten nearly down to the church when she said, "What on earth is that you have on your arm?" and he looked around to see that he had picked up a pair of old trousers which he had been wearing in the fields the day before and which he thought was his coat.

To the first person who guesses this man's identity, one year's subscription to The OIL WEEKLY will be given!

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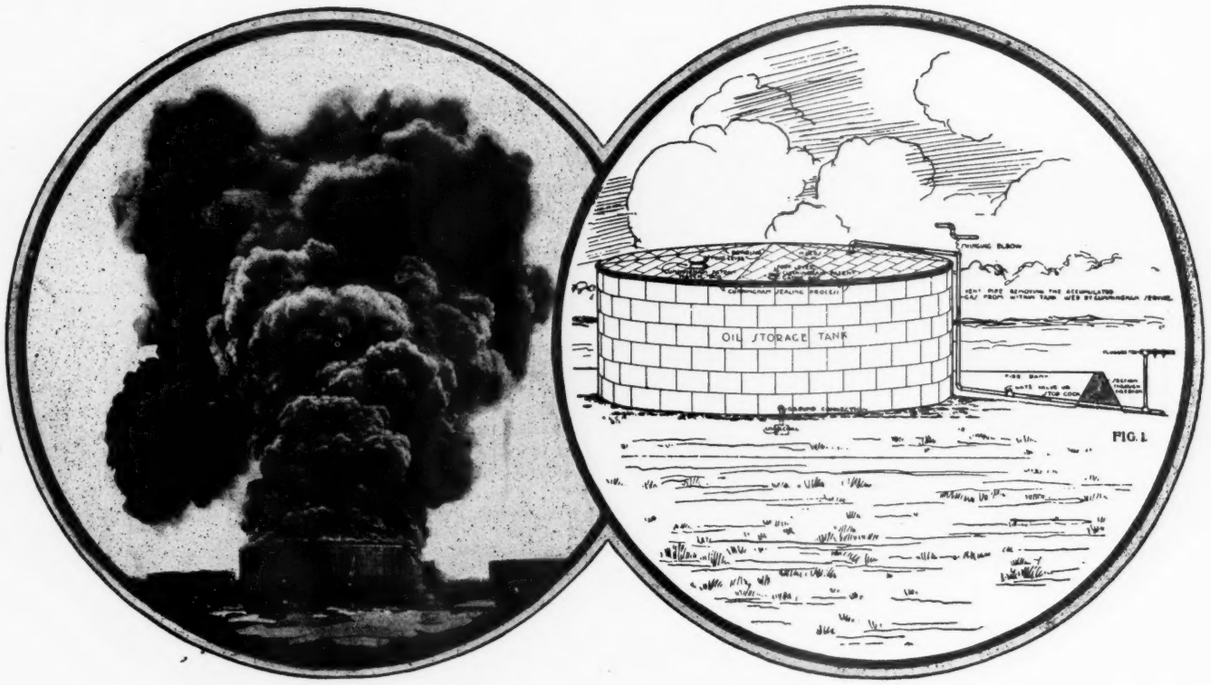

It's Better to Prevent Fires, than—

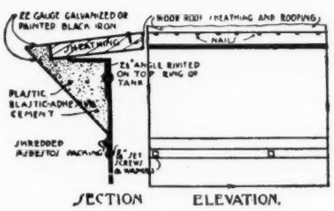

FIG. 2.

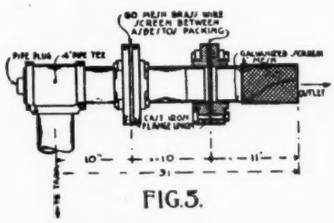
FIG. 3.

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Cutting Production Cost on Texas Coast

Economical Lease Management; How and Where Applied

BY JOHN R. SUMAN

The author of the accompanying article has listed herein the practical results which his and other companies have accomplished in the management of leases having both large and small production. This article was written for (The Gulf Coast Oil News) now The OIL WEEKLY in 1917, but every statement made therein holds good now. It is reprinted at the request of several people who were unable to secure copies of the original article.

Mr. Suman is assistant to the president of the Rio Bravo Oil Company, respectively the Texas and Mexican producing subsidiaries of the Southern Pacific Railroad Company.—The Editor.

A COMMON criticism of large producing companies is that they do too much operating in the office and not enough in the field. While this is true only to a minor degree, it is a well known fact that after the production on a lease has gotten so low that a large company cannot operate it at a profit a private individual can take hold of it and make it pay a handsome return. Examples of this are found in any Gulf Coast field. This is simply because of the fact that the private individual is on the ground all the time and makes an intensive and detailed study of every acre of his lease to see if there is any place where he is losing oil or failing to get as much as he should. On account of the extensive holdings of large companies intensive studies of small producing properties by competent men are not always possible. However, the following remarks apply to properties of most any size, and may be found of interest to both the large and small producer.

The Waste of Fuel Oil

As the price of coastal crude climbs toward $1.50 per barrel, operators are beginning to look around to see how they can possibly save some of the oil that is now going up the chimneys in the boiler plants. In the Gulf Coast fields, taken as a whole, nearly one-eighth, or 12 1-2 per cent, of the production from the wells never sees the market, but is used up as fuel for running steam engines, pumps and in treating oil; or is lost by being stored in earthen pits. It will be the aim of this article to show that by using modern and efficient methods this fuel consumption can be reduced to 4 per cent or less. With the coastal fields producing over 66,000 barrels of oil per day, this would mean an annual saving to operators of about 1,500,000 barrels of oil.

Every one knows that the common oil field steam engine and steam pump are the most wasteful types of prime movers. Too extensive use of steam power is responsible for a great deal of waste of crude oil. In the closing paragraphs of this article an attempt will be made to show that it is possible to operate large leases without employing steam power on them, except possibly in treating oil.

Many of the smaller companies allow their production to run into earthen sumps or pits, where the same is treated before being pumped into storage. The waste here is considerable in sandy soils, although every small producer will argue to the contrary. This is a pure waste of oil and can be easily corrected by installing proper treating devices, and the saving in production will soon pay for them.

Small Average Production of Wells

In any field during the "gusher" days the problem of production management is relatively unimportant. Handsome profits are being realized, and it is hard to make mismanagement show up. However, the "gushers" take care of themselves once they are brought in properly, and the problem resolves itself into one of handling the small producers. In the Humble field at present there are close to 550 producing wells. With a daily average production at the time this was being written of about 22,000 barrels for the field, this makes the daily average production per well run close to 40 barrels. In fields where there are not so many large producing wells the daily average per well is much lower. In the Saratoga field, for instance, the daily average production per well for the month of January, 1917, was 7.4 barrels. At Batson the average production per well will run close to 4.5 barrels. It will be seen, then, that the big problem in the Gulf Coast country today is not how to handle the "gushers," but rather how to handle a large number of small producing wells in order to make them realize a good profit on the investment.

The Standard Rig

In the coastal fields when a well is brought in that does not flow and is isolated from a pumping power it is "put on the beam" in order to pump it. This necessitates the building of a standard rig. The standard rig is a device designed in the Appalachian section and used universally in "hard rock" oil fields for operating a string of standard cable tools. It usually costs about $1200 to rig an ordinary well to pump with a standard rig, and four or five days' time is usually lost in so doing. It seems absurd that after completing a well with rotary tools, operators should be forced to build a standard rig in order to pump it. Pumping a well with a "steam head" or using compressed air are exceptions that find application in but relatively few cases.

Many Gulf Coast operators are now figuring on devices which can be set up on a derrick floor in a short time and which will give the same reciprocal motion as the familiar walking beam. Field men in the Caddo district have been most active in working on this problem, and several devices have been patented for taking the place of the standard rig. Two of the oil well supply houses now manufacture a structural steel pumping unit that can be set up on a derrick floor immediately the well is completed and the well put to pumping. Rods and tubing can be pulled with them and the well bailed the same as with the standard rig. In criticising these outfits it might be said that they are a little too light in construction for moderately deeps wells in this country. However, it is very probable that before many months some reliable concern will have on the market a pumping device that will cost in the neighborhood of $300, which can be set up on a derrick floor in a few hours, and which will do everything that is now being done by the standard rig. These outfits ought to be so made that they can be run with a steam engine, electric motor, gas engine, crude oil engine, or any kind of power that is available. It may be that within a few years we will regard the ordinary standard rig in this country with the same disdain that the modern rotary machinery manufacturer regards the early efforts in that field.

The standard rig is all right in the Eastern, Mid-Contient and Pacific Coast fields, where drilling is prosecuted to a large extent with cable tools, but in the Gulf Coast country it is a makeshift at best and stands as a reflection upon the ability of the operators that it has not long since been replaced by something more adaptable to this section. In this country, where the rotary system of drilling has been created and perfected to such a point that it now finds application all over the globe, there are certainly plenty of men eminently qualified for working out a detail that will make a rotary-drilled well independent of cable tool devices from start to finish.

The Steam Pump

In traveling around over a lease in the coastal fields one usually notes numerous steam pumps in use handling oil. The ordinary 10 by 6 by 10 duplex pump working at a moderately fast rate will consume almost twice as much steam as a ½ by 12 steam engine. For handling reasonably large amounts of 19 degrees Beaume oil over distances up to one mile through 2½ inch or larger pipe, a "tail pump" made up of an old working barrel and mounted on the pitman end of a walking beam will be found just as satisfactory as a steam pump. On leases where there are no standard rigs, and where all wells pump from jacks, a weighted jack mounted over a sump and operating a short working-barrel will handle the production very satisfactorily. Quite a few small operators are gradually getting around to the opinion that a steam pump has no place on a lease.

Developing a Lease

In the development of a small-producing property the wells, as they come in, are put on a standard rig; each rig being run either by a steam engine, or possibly a gas engine where sufficient gas is available. If steam is used as more wells are drilled it is supplied from a central station. As development proceeds the company finds that it has possibly thousands of feet of steam lines scattered around over the lease and the loss by condensation is considerable, even if the lines are covered with magnesia or other insulating covering. The fuel consumption for generating steam finally reaches such a high figure that steps are taken to handle the wells without the continual use of steam at each well. Usually, pumping powers are installed with 20 to 25 wells being pumped with jack lines from each power. A 35 to 50 horsepower engine is installed in the power. Both gas and steam engines are used for this service, and it is quite the custom to install both kinds of engines in each power; the

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steam engine to be used in emergencies. On leases where the gas pressure is weak it is beginning to be the custom to use crude oil engines in powers. Electric motors are well adapted to this work and one may be seen in operation in the Spindletop field; but, as yet, they have not come into prominence, mainly on account of the high cost of electric power.

Compressed Air Use

In the Salt Lake oil field near Los Angeles, Cal., on the property of the Rancho la Brea Oil Company, when the steam consumption became prohibitive air compressors were installed and 60 standard rig steam engines on the lease were run with compressed air, same being furnished through the old steam lines. In this way there was but a slight loss of power in transmitting the air and they were able to utilize all their old machinery. Points to be noted in converting a lease from steam to compressed air power are as follows:

1. First, ⅜-inch or larger plates should be riveted on each end of the pistons so that there will not be so much displacement in the ends of the cylinders.

2. All standard rigs should be run with air at a pressure of about 20 pounds per square inch. For pulling rods and tubing 60 pounds of air will be necessary. All walking beams should be counter weighted.

3. Preheaters are required at each standard rig to heat the air before it goes into the engines so as to avoid refrigeration. These heaters are fired with gas and it costs about $12.00 to equip each standard rig with a preheater. The air should be heated to 250 degrees Fahrenheit, otherwise ice will form in the valves.

4. A standard rig running at 20 lifts per minute requires 86 cubic feet of free air per minute to run the engine. This for a 1500-foot hole with oil ranging from 11 degrees to 18 degrees Fahrenheit and plunger pumps. A 20 by 24 single stage compressor running at 90 revolutions per minute will handle 10 wells at 20 pounds pressure.

5. In drilling wells with air instead of steam they found that 80 pounds of air was about as efficient as 125 pounds of steam and much quicker.

6. For lubrication tallow cups tapped into the cylinder or into the air inlet pipe must be used. Most any kind of oil will work in this cup.

This type of power should work very well in the Gulf Coast country on a lease having a large number of moderately deep wells to handle. Compressed air power is not very expensive when generated at low pressure by gas engine or Diesel engine driven, direct connected single stage compressors.

The main idea of a pumping power is to develop a horizontal pull of about 16 to 18 inches by the movement of a steel ring inside of which an eccentrically mounted spindle revolves. This has been perfected through several stages until today the most up-to-date type of pumping power is the under-pull band wheel type. This consists of a steel band wheel 18 feet or more in diameter on the periphery of which a 12-inch 6-ply belt some 130 feet long runs and transmits the power from the gas engine, steam engine, crude oil engine, or motor. The eccentric straps or rings are mounted under the wheel and as many as 35 wells can be pulled from one of these powers. The wells should be equally distributed on all sides of the power, or carried into the band wheel from different directions by swings, etc., in order to balance the load on the wheel. If the load is not balanced it tends to make the wheel run out of line. As considerable strain is thrown on the wheel it should be well set in concrete. With fairly good subsoil it is customary to make the concrete block in which the power is imbedded 10 by 10 feet in area and 5 feet deep. With quicksand subsoil it is well to give the base of the block a considerable amount of "spread."

The speed at which band wheels are run varies greatly with different operators. Some claim that the faster the power is run the more oil is gotten and hence it is speeded up so as to get as many as 26 lifts of the jack per minute. Others hold that up to a certain point all the oil will be gotten by running slower, and their powers are operated so as to get 15 to 20 lifts of the jack per minute. It is certainly true that conditions vary widely on different leases and that a speed which is best for wells on one lease is not suited to a set of wells on another.

Jack lines or "jerk lines" made of ⅝-inch steel rods are used to transmit the motion from the power to the jack at the well. Heretofore it has been customary to let these lines slide back and forth on top of posts or through holes bored in the posts. These friction surfaces are usually spaced about 30 feet apart and are kept well greased with axle grease. Considerable power is lost by having the rods pull over or through posts. With 20 wells on a power and each well averaging 800 feet in distance from the power there would be about 540 friction surfaces. Using oak, pecan or maple wood, it can be seen that at least 10 to 12 horsepower would be used up in overcoming this friction. Operators in the Gulf Coast country are just beginning to use the swinging type of jack line, where the line is swung from a pendulum-like rod attached to a post or piece of 2½-inch pipe driven in the ground. The friction loss here is negligible. Examples of the swinging type of jack lines can be seen on the Turnbow properties at Batson, the Rucker lease at Humble, and on the Rio Bravo Oil Company's Jordit tract at Saratoga.

The cheapest form of power for operating a band wheel is the gas engine, as long as a good supply of gas is available. In many of the coastal fields gas is getting rather scarce and the operators are looking for something to take its place. In localities where electric power is cheap, gas engines are being replaced by electric motors. These are the most satisfactory form of power for running the pumping powers. In the Gulf Coast country the operators are slowly adopting crude oil engines of the low compression or semi-Diesel type.

Much is to be said for and against the present-day crude oil engine. Points of design in which they appear rather weak are in not providing adequate scavenging facilities in the cylinders and in not developing proper methods of atomizing the fuel as it is injected into the combustion chamber. From the standpoint of proper scavenging in the cylinder the 4-cycle engine has a distinct advantage over the 2-cycle. Where the fuel is of relatively light grade and the engines are given moderately close attention excellent results are being obtained from some of the better makes. In using heavy oils of from 14 to 20 degrees Beaume gravity, good results can be obtained if the oil is heated before being injected into the engine. These engines most all have the "hot bulb" or "hot tube" type of ignition.

Every make of engine is designed to run at a certain speed and with a certain temperature of jacket cooling water. Operators who attempt to alter these conditions to suit themselves will find that their engines will give them considerable trouble.

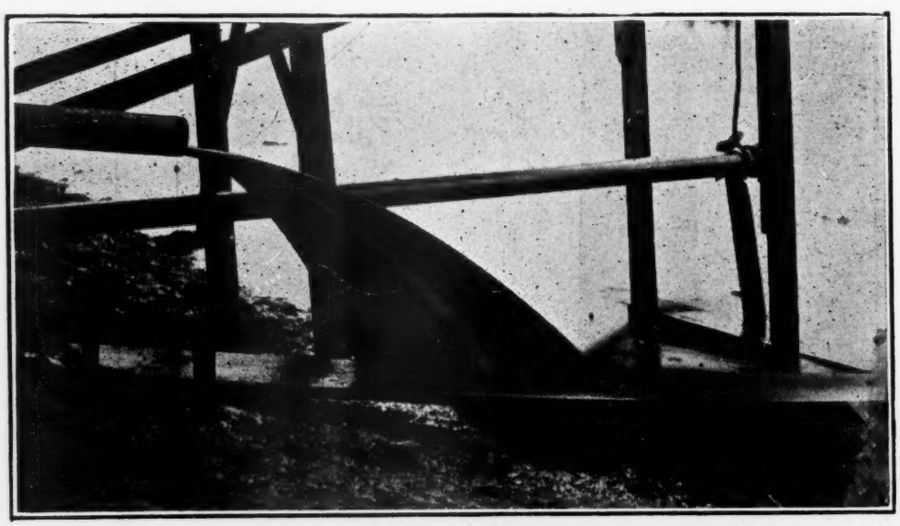
The saving effected by the crude oil engine as compared with the steam engine is at once apparent. A 35-horsepower crude oil engine of a good make will consume about two barrels of fuel oil per day. Steam engines doing similar work will use up 8 to 10 barrels of oil under a boiler.

Getting the Oil Out of the Well

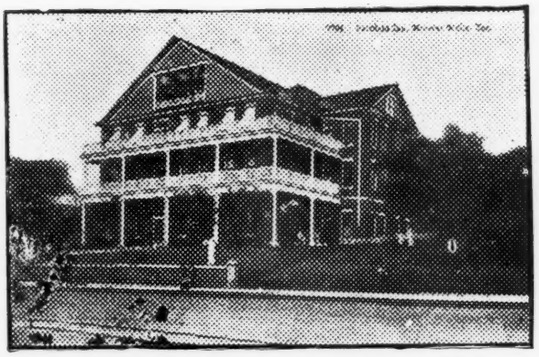
Taken as a whole, the pumping wells of the Gulf Coast country probably give more trouble than those in any other section of the United States. The fine sand of this section—which sooner or later enters the hole in varying quantities—is caused in the old wells by the strainer giving way, and in the new wells by too coarse strainer being set. Quite a few of the wells produce an emulsion of oil, water and sand that is pretty hard on any type of pump.

Handling Sand Wells

In handling sand wells the old style pump, which handles the fluid with cups, has to be done away with. Most of the operators are beginning to use the California pattern of steel plunger pump which is operated either with ordinary rods or with a closed traveling valve and 1¼-inch tubing through which the fluid travels to the surface. These plunger pumps will not



Looks like velvet, smells like gas and burns like h——. A flowing well in the Gulf Coast country.



FAIRFIELD INN

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A quiet and select home for oil men.
Every convenience of a
first-class hotel in

The National Health Resort

The Management of this hotel has met the needs of oil men from Oil City Pennsylvania, to Mineral Wells, Texas

FRED H. SCHEER, Proprietor

Condensed Statement of Condition
of the

Farmers State Bank

Burkburnett, Texas

As rendered to the Commissioner of Insurance and Banking at the close of business June 30, 1919

Resources

Loans and Discounts		$ 913,388.57
Real Estate, Furniture and Fixtures		15,944.35
Bonds and Stocks		125,699.28
Cash Due from Banks	$504,105.60	
Cash in Vault	88,823.54	592,929.14
Assessment and Interest in Guaranty Fund		3,600.16
Total		$1,651,561.50

Liabilities

Capital Stock	$ 50,000.00
Surplus and Undivided Profits	33,158.21
Certified Checks	350.00
DEPOSITS	1,568,053.29
Total	$1,651,561.50

Officers and Directors

A. A. KUEHN, President
W. R. HILL, Active Vice President
T. P. ROBERTS, Vice President
W. D. UTTS, Cashier
P. J. GREEN, Assistant Cashier

Directors

A. J. VAN CLEAVE A. LOHOEFENER
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Wichita Falls, Texas

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Loading rack at Mile Post 16, Burkburnett, Texas, with two thousand feet of private switch which we own. We can spot at one time forty-five cars, and load same with our large power within twelve hours.

Storage

We have 62,500-barrel storage. Our facilities for quick service are unsurpassed.

We sell in Buyers' cars but also own and operate a complete line of modern tank cars.

Elliott Jones & Co., Inc.

Capital Stock $300,000 San Antonio, Texas

handle quite as much fluid as the cups, but they possess the advantage of handling fluid carrying as much as 50 per cent of sand and mud.

In making up a plunger pump all brass parts should be done away with and steel substituted. Sand cuts brass very rapidly, whereas steel offers a fairly good resistance to this corrosive action. If a well makes some gas with the sand and oil, the cutting action is very marked, no matter what kind of metal is used. A gas anchor, made up of an extra length of perforated tubing and located beneath the working barrel, tends to keep the gas out of the barrel. These anchors should be used to a far greater extent than they are at present.

In most of the Gulf Coast wells the tubing is suspended in the hole, usually hanging several hundred feet off bottom. Many good wells are ruined by a string of tubing parting in the hole and dropping to the bottom, or else dropping while being pulled from the well. In other sections a newly-patented tubing catcher is finding a wide application. With this device attached to the bottom of a string of tubing, it is impossible for the tubing to drop in the hole.

Devices For Pulling Rods and Tubing and Bailing

As the wells on a lease are hooked up to the pumping power and the standard rigs are done away with, the question of proper equipment for pulling rods and tubing, and bailing, arises. In the Gulf Coast country there are about as many solutions to this problem as there are leases.

Some companies maintain a standard rig at about one well in five, and pull rods "across country" by having blocks anchored in the derrick floors through which the lines operate from the crown blocks in the derricks. Such a method is very unsatisfactory, as the man operating the steam engine is too far from the well where operations are being carried on, and hence cannot watch things closely. Accidents often result from this cause. Some operators place a small draw works and engine at every well. This system is too costly on a large lease.

Other operators are coming to use a "hoisting machine." This is nothing more than a Lidgerwood, or similar type, steam hoist, with two small steam cylinders of about 5 horsepower each, mounted on a wagon frame, and it is pulled around from well to well as needed. Operation of this machine necessitates having steam piped to each well. As the wells may be isolated from the boiler station, this means wet steam and consequently a "logy" engine. The loss of power here is quite an item. Wagon frames for carrying this hoist should have steel wheels with tires not less than six inches wide in order to be easily pulled around in any kind of weather.

In many of the "shallow sand" districts operators are doing away with derricks after the wells are drilled and pull rods and tubing with a portable "pulling machine." This outfit, as used at Batson, consists of three joints of pipe which telescope one within the other and which are mounted on a wagon frame. A small drum on the base of the largest joint of pipe is used for spooling the tubing line, and this is operated by horsepower. In the Saratoga field on the Rio Bravo Oil Company's holdings, a similar device is in use, but it is operated by a small steam turbine engine mounted on the bed of the wagon and connected to the drum by a chain drive.

On the Texas Company property at Sour Lake a traction well puller and cleaner operated with a distillate engine is in use. This outfit carries a portable telescoping mast and the drum is operated from the engine. It moves to a well under its own power and is absolutely independent of steam or horse power.

In the Kern River oil fields of California a device is being used for pulling rods and tubing and bailing wells that is far superior to anything else in its class. It consists of a three-ton chain driven motor truck on the bed of which is bolted a hoisting drum. The truck is run up to a well and the chain drive disconnected from the rear axle and connected to a sprocket on the hoisting drum. Bailing or pulling rods and tubing starts as soon as the clutch on the truck engine is let in. This truck can handle 800 feet of 3-inch tubing in the high gear. Running in low gear it is much more powerful. When this truck is not needed at the wells they run it into the shop, where a crane removes the hoisting drum and it is then available for hauling pipe or any kind of supplies. A more convertible or convenient source of power would be hard to imagine.

In the same field they are using a hoisting outfit operated by an electric motor. These are ideal where electric power is available.

Keeping Production Off the Ground

Where an operator has several wells making large quantities of sand, water and emulsion, it sometimes seems foolish to talk about pumping such a mess through pipe lines. Hence the practice is to let the fluid, or semi-fluid mass, flow out into an earthen pit, where the sand and water separate to a certain extent. The top portion of this fluid is then pumped to the treating tanks. Needless to say, a large amount of the oil is lost by seepage into the walls of the pit. The separation outlined above can be effected very nicely by letting the production flow into a "sand box." This is nothing more or less than a tin-lined box about 2 feet by 3 feet in cross section and 20 to 30 feet long, supported above the inches in the 20 feet. Baffles are placed in this trough about every 5 feet. The sand, water and oil are pumped into the upper part of the trough and the sand is separated out at the baffles. A pumper shovels this sand out of the box as often as is necessary. The fluid passes over the baffles and the top portion, which is mostly oil, flows into galvanized iron settling tanks. The water is bled out of the bottom part of the trough. One of these sand troughs can accommodate eight or ten wells, and they will pay for themselves in a short time.

The production is pumped from the galvanized tanks to the treating tanks.

The average fluid coming from wells in the Gulf Coast country contains more or less water and base sediment. Some of this will settle out in standing, but sometimes about 25 per cent of water is united with the oil in the form of an emulsion that requires heating with steam before it will separate. In some fields the affinity of the water and oil is so strong that it becomes necessary to heat the emulsion to the boiling point of water before the two will separate. The ordinary method of treating oil is to confine it in earthen sumps and cook it with steam until a separation of oil and water is effected.

Amount of Labor Necessary For Operating a Lease

The amount of labor absolutely necessary for operating any lease varies according to the number of wells and the trouble that these wells give. Briefly stated, the number of men should be sufficient to keep all the wells producing as continuously as possible. The absolute minimum of labor cost on any lease in the Gulf Coast country, insofar as I am aware, is on a certain lease in the Batson field with 29 producing wells and a total outlay for labor per month of $225. This amounts to $7.76 per well per month, and figures about 14c per barrel produced. The maximum labor expense per well is approached by a certain other lease on which are located 125 deep and shallow wells. On this property 28 roustabouts and 28 firemen and pumpers are employed, with a labor bill approaching $6000 per month. This figures $48 per month per well, but the actual labor expense per barrel produced only figures about 8c, owing to the greater production per well. Both properties above referred to are probably being operated with the least amount of labor possible in order to keep everything running.

The Ideal Lease

On medium large properties in the Gulf Coast fields it is possible to operate with electricity far more economically than with steam. The best way to show this is to

This boiler jumped 200 feet when it burst, up in the Ranger country. Incidentally it played havoc with considerable scenery, but hurt no one seriously.

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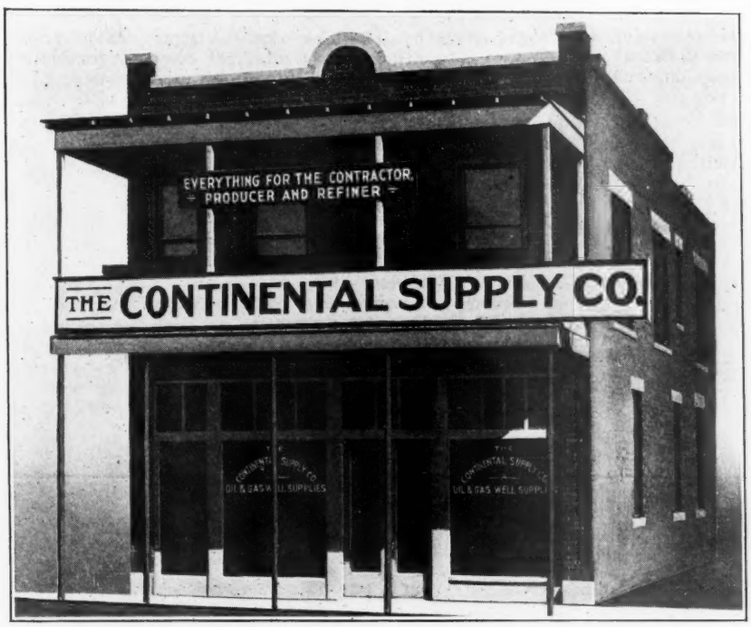

Our Branch in Ranger, Texas—*The Sign of Quality* for that District

When you want the best get in touch with headquarters —the nearest Continental Store

The Continental Line of Quality Products

Youngstown—pipe, casing, tubing, etc.
Titusville—gas and steam engines, boilers and pumping powers.
Union Tool—drilling tools.
New Bedford—drilling cables, bull ropes and cordage.
Hazard—wire lines.
Fairbanks-Morse—gas and oil engines, steam, power and centrifugal pumps.
Pittsburgh, Valves and Fittings—malleable and cast iron, brass, etc.
Lunkenheimer—high grade valves and specialties.
Bell pump or sand fighter.
Foos—horizontal and vertical gas engines.
Mascot pumping powers. Contico pumping powers.
Invader, Severe Service and Rough Rider rubber belting.
Camel Hair, Continental Special and Hummer Rubberized belting. Contico red stitched canvas belting.
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Our Line is Complete—Everything for the Contractor, Producer and Refiner

The Continental Supply Company

General Offices—St. Louis, Mo.

take into consideration a set of hypothetical conditions and show the savings that can be effected with electric power. Take, for instance, a property of 250 acres on which there are located 90 producing wells of average depth. We will suppose that this property is now being operated with steam power. Ten of the wells are isolated, or make considerable amounts of water, and hence are operated with standard rigs. The other 80 wells are operated by jack lines from three band wheel pumping powers. The powers are run with combined steam and gas engines and steam is used for pulling rods and tubing at the wells, for bailing, for running standard rigs, for operating steam pumps, and for treating oil. Steam is supplied from one central station with 700 boiler horsepower and one substation with 200 boiler horsepower. The reader can imagine the number of feet of steam lines necessary to supply steam at the various places where it is needed on the property. We will consider that the production on this property is 1300 barrels per day and that 12 per cent of this, or 156 barrels of oil, is used for fuel at the boiler stations. We will further consider the gas supply as little more than sufficient for running two 50 horsepower gas engines located at two of the pumping powers.

It is proposed to do away with all steam engines, steam pumps and gas engines on the property, and to treat oil with steam, using one small boiler, same to be fired with the gas saved by doing away with the gas engines. For steam engines electric motors are to be substituted. In place of steam pumps, tail pumps, mounted on the pitman end of walking beams, and short working barrel pumps, operated by jacks, are to be used.

Power for running motors is to be generated by a 260 K. W. generator direct connected to a 300 horsepower Diesel engine. It must be borne in mind that there is a considerable difference between the low-compression crude oil or semi-Diesel engine in small horsepowers and the high-compression type of true Diesel engine made in sizes of 100 horsepower and upwards. The latter has been perfected to the point where it is absolutely reliable in every respect.

Burn Any Kind of Fuel

The better makes of Diesel engines will burn any kind of fuel and are guaranteed to operate on full load with a fuel consumption not to exceed 0.5 pounds per brake horsepower hour. In other words, a 300 horsepower engine would be guaranteed not to use over 10.6 barrels of 19 degree Beaume gravity oil per 24-hour day when running at full load. In actual practice some of these engines on full load operate with a fuel consumption as low as 0.42 pounds per brake horsepower hour.

Providing that there is enough gas available on the property under consideration for generating sufficient steam to treat the oil, the total fuel consumption per day would be reduced from around 156 barrels to 10.6 barrels by installing the electrical equipment. In other words, the fuel consumption would be reduced from 12 per cent to 0.81 per cent of the total production on the property.

With the equipment above referred to the following expensive items of upkeep would be done away with:

1. Repairs to boilers, such as replacing flues, targets, etc.
2. Repairs to gas engine.
3. Repairs to steam lines.
4. Upkeep of boiler feed water system and trouble with boiler water.

It is important to bear in mind that the depreciation on electrical equipment is only about one-half what it is for steam equipment.

The saving per year of the electrical equipment over the steam would be somewhat as follows:

52,925 barrels of fuel oil at $1.30	$68,802.50
Maintenance saving—	
Elimination of one boiler station, hence saving in labor of	2,160.00
Estimated saving per year in repairs, renewals, lubricants, etc.	1,300.00
Total	$72,262.50

The cost of installing the proposed electrical equipment is estimated to be about as follows:

1 300 horsepower Diesel engine.
1 260 K. W. generator, 2200 volts.
13 8-25 horsepower, two speed motors for operating standard rigs, portable hoisting engines, machine shop, etc.
3 50 horsepower motors for operating pumping powers.
Miscellaneous transformers, switchboards, exciter, etc., etc.

Total	$35,000.00
Installation of above, including all foundations, buildings, poles, wiring, etc.	22,000.00
Total	$57,000.00
Salvage value of equipment to be replaced	8,300.00
Net cost of new equipment	$48,700.00

From the above it can be seen that the electrical equipment for this property will pay for itself in about eight months' time. As the coastal crude gets scarcer, equipment of this kind will forge to the front very rapidly, and it may be that within a few years' time we will be wondering why we were so extravagant as to use steam power in the old days.

The use of the tractor or truck as a time and money saver is becoming daily more and more apparent. The tractor pictured above can take care of more transportation than two dozen teams, at a consequent saving in labor and expense of upkeep.

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MANUFACTURERS OF

Oil Well Drilling & Fishing Tools

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MUSKOGEE, OKLA.

Deepest Well in World in United States

New Lessons Are Being Learned in Deep Drilling

DURING the last few years the Hope Natural Gas Company and the Peoples Natural Gas Company, both of Pittsburgh, Pa., have been drilling deep wells in northern West Virginia and southwestern Pennsylvania to find deeper oil-bearing and gas-bearing sands, their object being to reach, if possible, the horizon of the rich Clinton sand of Ohio, which, according to Dr. I. C. White, the state geologist of West Virginia, should be found in this region at depths between 7000 and 8000 feet.

Drilling for Deep Oil and Gas

The first exceptionally deep well thus drilled, the R. A. Geary well, of the Peoples Natural Gas Company, is about four miles northwest of McDonald, Pa., and about twenty miles southwest of Pittsburgh. The mouth of the well is about 1050 feet above sea level. The well penetrates the Gordon stray sand, the last of the usual gas sands in this region, at a depth of 1971 feet. From this point to a depth of 6700 feet the strata penetrated are alternately "lime" and "slate," and from 6700 feet to the bottom, 7248 feet, they are "sand" and "lime" interspersed with about 60 feet of rock salt. The second deep well was drilled by the Hope Natural Gas Company on the farm of M. O. Goff, about eight miles northeast of Clarksburg, in northern West Virginia. Its mouth is 1164 feet above sea level. The well begins 200 feet below the level of the Pittsburgh coal and penetrates the usual oil-bearing and gas-bearing sands, the lowest being the Bayard, which lies at a depth of 2210 feet. The strata in the remainder of the well are alternately "lime" and "slate." The third deep well, the J. H. Lake, of the Hope Natural Gas Company, is about eight miles southeast of Fairmont, W. Va. It is about 20 miles north of the Goff well and about 60 miles south of the Geary well. The mouth of the well is about 1300 feet above sea level. The Bayard sand, the lowest of the gas sands, was found in this well at a depth of 2050 feet. The remaining strata are alternately "lime," "slate" and "sand."

Four Deepest Wells in the World

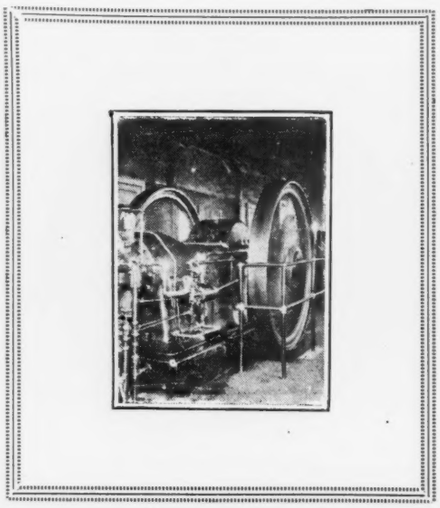
Named in order of depth, the four deepest wells in the world are the Lake, 7579 feet; the Goff, 7386; a well at Czuchow, Germany, 7348, and the Geary, 7248. The two deepest wells in the world are therefore the Lake and the Goff, the Lake surpassing the German well by the large margin of 231 feet. In comparison with these great depths, other depths reached by wells or mines sunk in the crust of the earth are rather insignificant. The deepest mine in the world is shaft No. 3 of the Tamarack mine, in Houghton County, Mich., which has reached a depth of 5200 feet. Other shafts of the Tamarack Company and of the Calumet & Hecla mine, in the Lake Superior region, reach depths between 4000 and 5000 feet. Three shafts in the Prizbram silver mines, in Austria, have reached depths of about 3300 feet. The Victoria quartz mine, at Bendigo, Australia, is 4300 feet deep. A number of shafts in the Transvaal gold region of South Africa have been sunk to depths of about 4000 feet.

Limits to Depths of Mines and Wells

The depth to which a mining shaft can be sunk is limited by the heat of the rocks, as the temperature at a depth of a mile in nearly all parts of the earth are so high that workmen can not live in it, even with ventilation. The depth to which a well six inches in diameter can be drilled seems to depend chiefly on skill in drilling and strength of cable. The cable itself is heavy, and besides carrying its own weight and the weight of a drill, which weighs one or two tons, it must bear strains produced by vertical movements of the drill, which may be so great as to break it at any moment, so that the drill and a part of the cable may be lodged in the well in such a way that the can not be removed. Exceptional skill is required, therefore, in operating the ponderous machinery used in drilling a well. The drill, which is a column of steel about five inches in diameter and 40 or 50 feet long, beveled to a V-shaped edge at the lower end, is attached to one end of the cable, and at some other point, determined by the driller, the cable is attached to a long beam, which is operated in the same manner as the walking beam of a steamboat. Merely to lift the drill through the height determined by the swing of the end of the walking beam and to let it drop repeatedly, would do no drilling. In order to drill, oscillations must be induced in the cable, such as those set up by attaching a light weight to a suspended rubber band. A slight oscillation properly induced by the finger at the upper end of the rubber band will produce a very large oscillation of the weight attached to its lower end. In some such way as this the skillful driller produces oscillations in the drill bit, which throw the sharp beveled edge of the drill on to the rock with high velocity. The only means that the driller has of knowing of the behavior of the drill is the general behavior of the machinery and the slight impulses or tremors in the cable, which he detects by his hand alone.

Deep Drilling Is Instructive

The information obtained from drill holes carried to great depths is of exceptional economic and scientific importance. Although the wells drilled by the Hope Natural Gas Company have not yet reached the goal sought—a depth of 8000 feet—they have, nevertheless, come within 421 feet of the goal, and incidentally they have established the fact that no valuable deposits of oil exist in the immediate vicinity of the wells at depths somewhat greater than 7000 feet.



What's in the Interior of the Earth?

The materials and the conditions in the interior of the earth have long been a favorite subject of speculation among scientific men. According to the modern mathematical theory of the propagation of earthquake waves through the earth the outer rocky shell of the earth, which is about two and one-half times as heavy as water, extends to a depth of less than 1000 miles. Inside of this shell is some material, probably metallic, which is more than five times as heavy as water. Estimates of the temperature at the center of this nucleus range from 3000 degrees to 180,000 degrees F., but these figures have little or no value, for mathematicians have not yet found the law of the distribution of temperature from the surface to the center of the earth. The temperature evidently increases with the depths, a fact again confirmed by an elaborate series of observations of temperature made in each of the three deep wells, the Geary, the Goff and the Lake, by C. E. Van Orstrand, of the United States Geological Survey, Department of the Interior. In each of these wells the temperature at a depth of 100 feet is about 55 degrees F. and gradually rises with increase in depth, reaching 142.0 degrees F. in the Geary well at a depth of 6100 feet, 159.3 degrees F. in the Goff well at a depth of 7310 feet, and 168.6 degrees F. in the Lake well at a depth of 7500 feet. The observation at a depth of 7500 feet in the Lake well was made at the deepest point yet reached by any observer.

Unexplained Enormous Heat

The source of the enormous quantity of heat stored in the interior of the earth is not known. Some writers think this heat is due to the disintegration of radium in the rocks, others think that the earth is a cooling globe, radiating heat developed during condensation from the original nebula, and others think that it is due to various causes, such as radio-activity, chemical reactions, impacts from meteorites, or condensation from nebulous material.

Some Interesting Results of Deep Drilling

The strata of lime, slate and sand penetrated by these deep wells were originally sediments deposited from ocean water. A bed of ocean water was actually found in the Geary well at a depth of 6260 feet. Dr. I. C. White, state geologist of West Virginia, with whom the United States Geological Survey is co-operating in these investigations, is of the opinion that this water is a fossil ocean, imprisoned since mid-Paleozoic time. Interesting evidence in regard to the geologic history of the formations was obtained by Charles Butts, of the United States Geological Survey, who identified a number of fossils from depths of 7187 to 7355 feet in the Goff well. The material from the Lake well has not yet been fully examined. It may be possible by examining the fossils to determine the geologic ages and horizons of the beds penetrated and so to estimate the depth at which the Clinton sand should lie underneath the bottom of this well. The well probably does not pass through more than one-half the total thickness of sediments in this region.

Fig. 201—3¾" X 30"
Gaso Rodline Pump

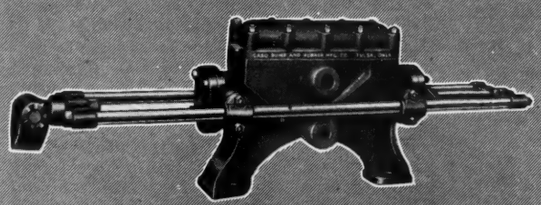


Fig. 301—3" and 3¾" X 24"
Gaso Piston Power Pump

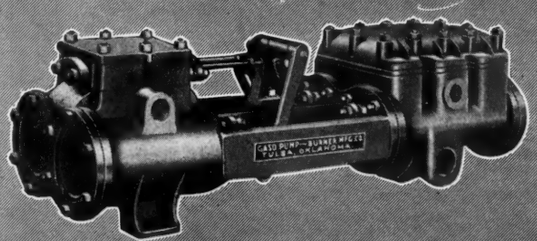


Fig. 401—7½" X 2½", 3", 3½" and 5" X 10"
Gaso Dup. Piston Steam Pump

They are all different

—but everyone is a scientifically constructed pump that will produce maximum efficiency on the class of work for which it is designed.

"Gaso Pumps"

are designed by capable pumping engineers of 27 years experience and each and every part that goes to make up Gaso Products are carefully selected.

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Tulsa, Oklahoma, U. S. A.

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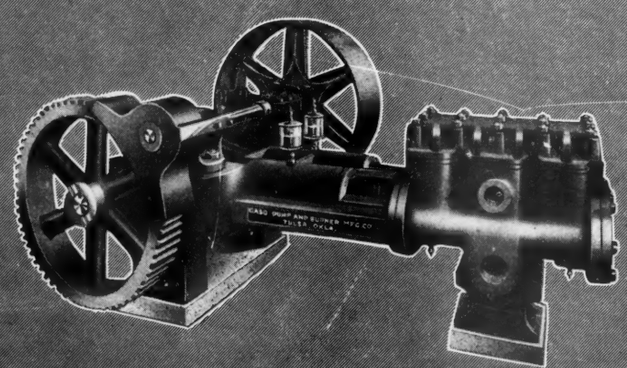


Fig. 501—2½", 3", 3½" and 5" X 10"
Gaso Horiz. Dup. Piston Gear Driven Pump

Drilling Time on Wells in Various West Texas Fields

THE production department of one of the major companies operating in West Texas gave the following time table for the completion of wells in the different sections of the territory:

Stephens County .....90 days
Ranger field .....50 days
Desdemona .....30 days
Wildcat territory—depends entirely on location and accessibility to supply bases.

These figures are estimates of the minimum time required to complete tests, making no allowance for grief of any kind, or the loss of a single day's time. All delays are to be added to number of working days required for making the tests.

In actual practice, it takes considerably longer to drill in any of the fields named than the estimates would lead one to believe. A record of typical wells in the fields will show that in order to get 90 working days, drilling days, it is usually necessary to spend from four to six months on the job. A hypothetical "drilling time," being an average of the number of working days spent on all the wells in the various fields, would show an entirely different scale of limits for the completion of tests in the deep sand districts.

Drilling by Contractors

In West Texas, where the large majority of wells are drilled by contractors who own their own tools, employ their own labor and make the hole at so much per foot, the matter of time required to complete tests is of supreme importance. The labor bill on a drilling test runs about $50 a day, sometimes more, even when everything is running smoothly. The contractor therefore is forced to calculate his profits by the amount of hole he can make in each 24 hours, leaving a broad margin for accidents and grief.

Many Things Affect Drilling Time

The weather, the subsurface formations, the efficiency of labor, the quality of the tools used, fuel, water, quality of casing or the available supply of the same, accidents of various kinds, and sometimes poker games, affect the drilling time of wells.

One company had a drilling well in West Texas that always showed its progress on the night shift, the day crew never accounting for any hole in its daily report of progress. An investigation was made. It was found that the day crew made all the hole, and that at shift time the night crew bantered the boys on the day tower for a little friendly game of poker. The night driller was long on poker but short on making hole. The result was that the night crew won all the "hole" of the daylight boys, and then immediately went to bed for the night.

The efficiency of the labor employed is one of the big factors in making a hole. A large number of the fishing jobs are attributable to carelessness or inexperience on the part of drillers. And fishing is the one big time-killer in West Texas.

Fishing Jobs

The biggest scarecrow to drillers and contractors, as well as to the operating companies in West Texas, is fishing. About 10 per cent of the wells are fishing all the time, and some of them have been tied up with fishing jobs for months at a time, or lost entirely.

Fishing jobs are sometimes unavoidable, but more usually they are the result of hasty and careless work, or of faulty materials. Failure to properly anchor a string of casing, taking chances with old or worn-out casing or cable, rough handling of drilling tools, poor connections in casing and a dozen other things may lead to fishing jobs that will cause serious losses of time and money.

The methods used in recovering tools or casing vary. Fishing tools are usually handled by cable. If a joint or string of pipe is in the hole, tools especially prepared to get hold of it are lowered by steel cable, and efforts made to get hold of the lost pipe. Tools are recovered in the same way. The old relay system of fishing, especially for casing, is frequently used in West Texas. They use a string of the casing the same size as the one lost, with left-hand threads provided, and atttempt to screw into the lost joint or string. This plan has one salient feature: if you can ever make a good connection, you can pull the bottom out of the hole or get your lost string.

Some Typical Wells

Warren Wagner's first well on the Merriman school lot is said to have been drilled to the 3200 foot level in 28 days. This is record time, and was established by the same incentive that made Uncle Jake's jack rabbit climb a tree—"he was obleeged to do it, sah."

Wagner leased this lot about the time the T. & P. Coal Co. got its first production on the Floyd Brewer tract, for which the school lot was an offset. When he began making preparations for drilling the lot, the T. & P. made a string of locations all around the two acres, and a pretty little game of "Fox and Hounds" was started. About this time the government was doing all it could, through a long series of committees, bureaus and sub-bureaus, to limit the use of steel for oil field work to just what was required to actually produce the petroleum needed for the country. So an invitation was extended to hold up the drilling of a part of the offset wells, although enough of them were allowed to proceed to furnish a good incentive for Wagner to speed things up.

The Gulf Production Company's first test on the Stoker tract, in Stephens County, drilled to the top of the black lime in 48 days. Only about three hours' time was lost during the whole interval, due to a minor fishing job, and for Stephens County this 3235 feet of hole in 48 days remains a record.

The following table is of typical wells in Eastland and Stephens Counties, and may be taken as a fair basis of computation of the time required to complete tests in either of these counties:

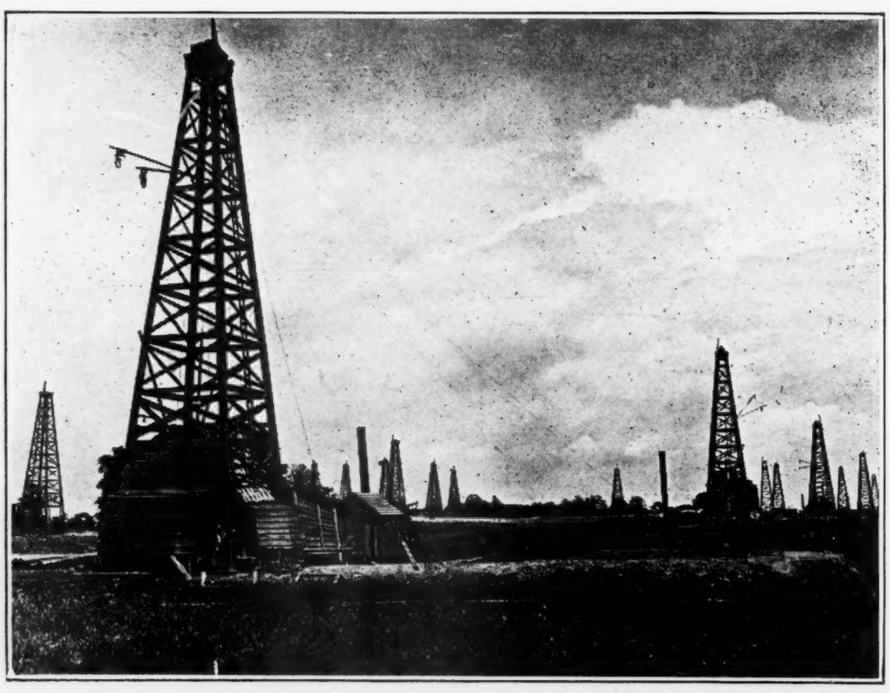
Stephens County

Company	Well	Date started	Date completed
T. & P. C. & O. Co..	No. 2 Bardford	March 20, 1919	July 19, 1919
Texas Company	No. 1 E. S. Curry....	July 12, 1918.....	May 31, 1919
Texas Company	No. 1 Grosclose.....	August 16, 1918.....	April 12, 1919
Texas Company	No. 1A Parks.....	June 22, 1918.....	January 4, 1919
Swensondale Oil Co..	No. 1 Swenson.....	March 8, 1919	June 20, 1919
Texas Company	No. 1 K. Stoker.....	March 7, 1919	June 25, 1919

Eastland County

Magnolia Pet. Co. ...	No. 1 O. Harris.....	March 26, 1919.....	June 6, 1919
Magnolia Pet. Co. ...	No. 1 C. T. Terrell..	March 18, 1919.....	May 19, 1919
Sinclair Gulf	No. 1 Hogg.....	March 15, 1919.....	June 7, 1919
States Oil Corp.	No. 1 Parrack.....	June 1, 1918.....	May 10, 1919

(Set 8¼-inch casing at 2050 feet on August 31, 1918; set 5 3-16-inch casing at 3485 feet on November 11, 1918; set 5-inch casing at 3505 feet on December 14, 1918; topped the sand at 3665 feet on January 1, 1919; on May 10, 1919, shot with 320 quarts at 3665-3895 feet, making 50 barrels at the total depth of 4085 feet.)



The Terrell lease—Ranger field

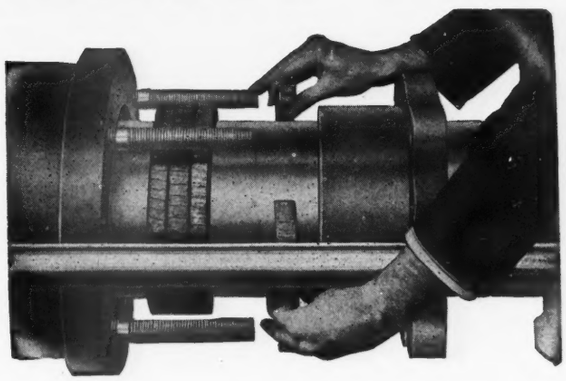
CAN YOU BEAT IT?

LISTEN!

The other day an engineer dropped into our office and said:

"If everybody knew the genuine satisfaction there is in your JOHN CRANE PACKING you wouldn't have to advertise."

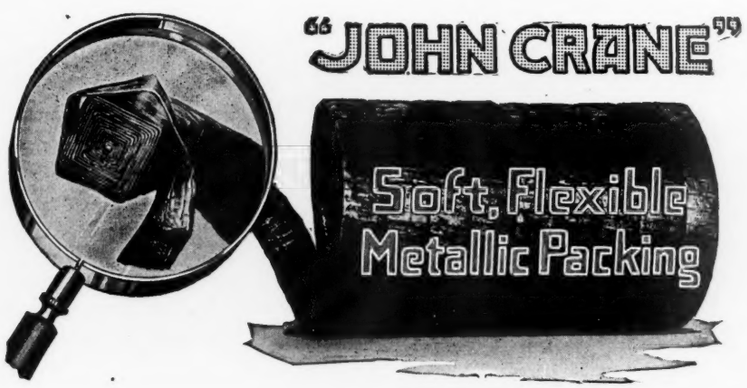
Unfortunately, however, all of you Refiners, Superintendents and Mechanics are not familiar with *"John Crane"* and we want to *"show you."*



It has always been our ambition to market a Packing that incorporated all of the following features:

RESERVOIRS *of* LUBRICATION **ELIMINATION *of* MAINTENANCE COSTS**
SIMPLICITY **FLEXIBILITY** **LONG LIFE**

AND NOW WE "HAVE IT"



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IN RINGS FOR

Presses	Plunger Pumps
Ammonia Rods	Accumulators
Oil Rods	Elevator Rams
Turbines	Large Steam Rods
Air Compressors	Centrifugal Pumps

"JOHN CRANE"
IN COILS FOR

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Corliss Valves	Small Steam Rods
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TELL US *the nature of your requirements for we want you to try a set or a coil—its yours on approval*
We furnish the packing—you pay when satisfied

If you don't know "John Crane" you have a big, satisfactory surprise in store for you

THE EDWARD SOPH COMPANY

Dealers in Scientific Material, Laboratory Apparatus, Special Equipment for Refineries, Gasoline and Industrial Power Plants

Long Distance Phone 6559

224 East Third Street, Tulsa, Oklahoma

Time, Calls Judge, as He Dimisses Court

What Time? June 30th, 8:30 p. m.—That's Why Court Was Adjourned

Under indictment for diabolical and malicious labor.

Tried in Circuit Court of Appeals, North Texas District, Judge J. A. Gardener presiding.

Proceedings and testimony:

Council for defense questions first witness:

Q. Will you state your name to the court?

A. Red Maurice.

Q. What is your other name besides Red?

A. Damfino. Just Red, I guess.

Q. Do you know the defendant in this case, Mr. C. R. Broune?

A. I do.

Q. How long have you known him?

A. About 25 years.

Q. Do you know the defendant intimately, know his daily habits and tastes?

A. I do.

Q. Have you been intimately associated with the defendant at any time during the past five years?

A. I have.

Q. Is the defendant related to you in any way?

A. Yes.

Q. How is he related to you?

A. By personal note.

Q. How was this debt contracted?

A. I don't know what you mean.

Q. How did it happen that Mr. Broune owed you a note?

A. Well, he just signed it and gave it to me, is how it happened.

Q. That isn't the point. How did he become indebted to you?

A. In the natural way.

Q. Was he working for you?

A. No; he was working for himself.

Q. How does it happen that he pays you to work for himself?

A. He was working for himself, but it didn't work.

Q. You say he was working. Now what kind of work was this?

A. I have forgotten.

Judge Gardner intervenes. To the witness: "You will have to answer all questions fully and in detail, just as they are asked, or I'll send you to the hoosegow."

Q. When was this debt made?

A. About one year ago.

Q. Where were you then?

A. At Cisco, Texas.

Q. Where were you when the debt was made?

A. At the hotel.

Q. Was Mr. Broune there too?

A. He was.

Q. What time of day was it?

A. Wasn't day at all.

Q. What time of night was it?

A. About 12 o'clock.

Q. Were you two alone?

A. I have forgotten.

Q. Were you both working on the night shift?

A. We were that night.

Q. Now what kind of work was that?

A. Matching pennies.

Q. Matching pennies?

A. Yes, sir.

Q. How much does the defendant owe you?

A. Eight hundred dollars.

Q. And you won it matching pennies?

A. Yes, sir.

Q. Now, Mr. Maurice, did you ever see Mr. Broune doing any other kind of work, labor, exercise, calisthentics or gainful endeavor?

A. I never did.

Witness is dismissed.

Next witness is introduced.

Q. State your name to the court.

A. H. A. Milze.

Q. What does H. A. stand for?

A. Harry Alexander.

Q. Then your name is Harry Alexander Milze?

A. That's what some call me.

Q. Do you know the defendant in this case, Mr. C. R. Broune, intimately?

A. I wish I didn't.

Q. Then you do?

A. I do.

Q. How long have you known him intimately?

A. Why, we used to shoot—shoot,—used to shoot sparrows together down in the Gulf Coast country.

Q. Did you ever shoot anything else?

A. No, sir.

Q. Now, Mr. Milze, this defendant is under indictment for working, and will you state to the court, from your long years of personal contact with the defendant, whether or not you ever saw him actually at work?

A. No, I never saw him actually at work, but I have seen him pretty close to it.

Q. You mean you have seen him close to work?

A. That's the idea.

Q. Please explain to the court just where and when this was.

A. One day I saw him in an office where there was another man working.

Q. Who was this other man?

A. Mr. J. Addams.

Q. You are sure that the defendant was NOT working?

A. He wasn't working that day.

Q. What was he doing?

A. He was losing all the time.

Q. Losing? What do you mean?

A. He was losing flesh. He was getting thinner every minute.

Q. Were you working at the time?

A. Yes.

Q. And you say Mr. Addams was working too?

A. Yes.

Q. But Mr. Broune was not working?

A. No, he was losing.

Q. Did you ever know of him working, at anything?

A. No.

Witness is dismissed.

Character witness introduced.

Q. State your name to the court.

A. Lester Spoons.

Q. Mr. Spoons, do you know the defendant in this case, Mr. C. R. Broune?

A. Yes, I met him about a year ago.

Q. Where did you meet him?

A. Near Abilene.

Q. Were you working out there?

A. No; we went out there to a picnic.

Q. Who introduced you?

A. I have forgotten.

Q. Do you know the defendant to be a man of high ideals, nobility of character, gentlemanly in habits, and industrious in the fulfillment of his tasks?

A. I do.

Q. Do you think he is a man who would swear?

A. No.

Q. Do you think he is a man who would lie?

A. No.

Q. Do you think he is a man who would smoke?

A. No.

Q. Do you think he is a man who would drink?

A. No.

Q. Do you think he is a man who would carry matches?

A. No.

Q. Do you think he would be chivalrous and kind to the unfortunate?

A. Yes.

Q. You say you met him at a picnic?

A. Yes.

Q. Did you go to the picnic with him?

A. No.

Q. What kind of a picnic was this?

A. Just a regular picnic.

Q. Was it held right in Abilene?

A. No. It was out at the country club.

Q. Who gave the picnic?

A. A bunch of the boys.

Q. Weren't there any women there?

A. No.

Q. How long did it last?

A. I have forgotten.

Q. When did you go home?

A. Some time that night.

Q. Did Mr. Broune leave at the same time?

A. I don't know.

Q. Was the picnic over when you left?

A. I don't know.

Q. How did you leave?

A. I don't remember.

Q. Was there anything to drink at the picnic?

A. Just Brazos River water.

Q. Was the river muddy?

A. I believe it was.

Q. Did the water affect your head any way?

A. It made me sick.

Q. Did you have to be taken home?

A. I guess I did.

Q. Did Mr. Broune have to be taken home too?

A. I don't know.

Q. Did you see him drink any of the muddy river water?

A. Yes.

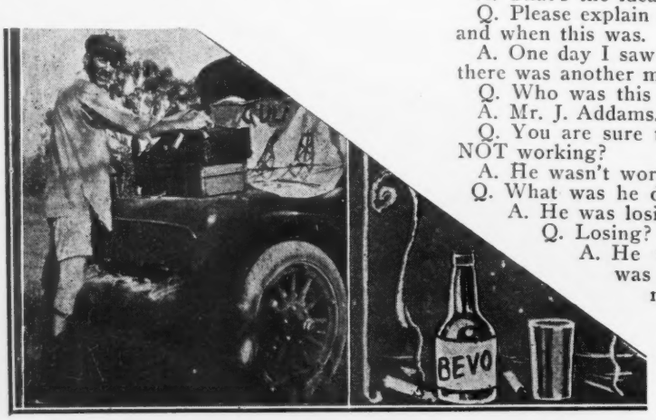
Q. Did it seem to make him sick too?

A. It made him feel good, the way he acted.

Q. Was there any sporting at this picnic?

A. Not much.

(Continued on Page 166)



"Well, your honor, he won my pants."

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"Everything for the Oil Field"

A complete line of pipe fittings, valves and oil well supplies

A WELL EQUIPPED MACHINE SHOP

We make tool joints

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Wichita Oil Field Special
IS THE LOGICAL TRUCK

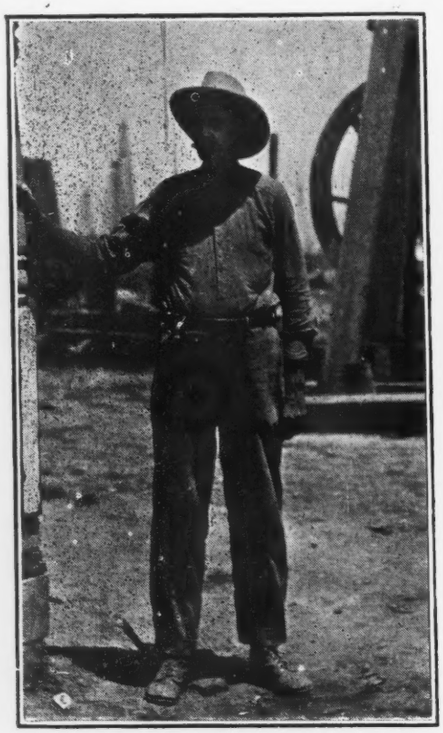
Other Wichitas—1½ to 5 tons
RIGHT-NOW-SERVICE FOR WORN OR BROKEN PARTS

Wichita Falls Motor Company

Postoffice Box 990
Wichita Falls, Texas

Uncle Wash, Rent Collector and "Mayor;" Well Pleased Now

"You know I ought to go over to Wichita Falls and make Bob Waggoner buy me an automobile, I have so much running around to do; but I couldn't run the pesky thing if I had it," said W. D. Wash, "mayor" of New Town, the overgrown village in the Northwest Burkburnett oil field, recently while talking to a friend,



Uncle Wash, "Mayor of New Town," the new city springing up in the Northwest Burk field

after making his rounds to collect rents from his numerous "tenants."

"Uncle Wash," as Mr. Wash is generally known to his friends, went to work for R. M. Waggoner about seven years ago on his farm-ranch of 520 acres, northwest of the little village of Burkburnett. For six years he fed the cows, did a little plowing now and then, ran errands for Mrs. Waggoner, and was a handy man about the place. The Fowler well came in a gusher more than a year ago at Burkburnett, and that little village slopped over before the villagers could realize just what was happening. The Waggoner farm was some four miles northwest of the oil well, and Uncle Wash kept on feeding the cattle and bringing the tears to Bog Waggoner's eyes when he had to pay for the feed Uncle Wash was carting out to those cattle during the drouth.

After awhile Bog Waggoner went over to Vernon, called Clois Green into conference, and the Burk Waggoner Oil Company was formed to drill for oil on the Waggoner farm. The company had a lease on 60 acres and it was capitalized at $60,000. Uncle Wash was presented with a share of the stock, and when the company was sold for $2,000,000, Uncle Wash sold his share for $3,333.33—and he put the money in the bank. He was 56 years of age about that time, and he thought it was about time to put something away for a rainy day, because he fears that he will begin to get old in the next ten or fifteen years. He claims that a man is just as old as he feels, and he says he still feels quite young, thank you.

Bob Waggoner, becoming a millionaire overnight, almost, had a kindly feeling for Uncle Wash, and Mrs. Waggoner remembered the thousands of steps Uncle Wash had saved her. Naturally they wanted to share their good fortune and Uncle Wash was forthwith named "mayor" of New Town, the village without a name in the midst of the new field, and he was charged with the duty of renting lots to those who wanted to erect shanties, houses, tents, etc., for business places, hotels, eating houses and cold drink stands. The entire receipts were to be his.

Uncle Wash then fixed $20 a month as a fair rental for a plot of ground about the size of a city residence lot, and the renters were asked to pay in advance. They never have to bother about when their rent is due. Uncle Wash looks after that part of the matter himself, and he is always around on the morning of the day the rent is due. His income was around $800 a month in August, and is showing a gradual increase each month. Uncle Wash has no family, never could get himself to the point of taking unto himself a wife, and has no near relatives. All this money he is now getting is going into the bank. He fails to tell his close friends what he intends to do with it. All they know is that he is holding to it and putting it away.

He was born in Mississippi, and has spent the intervening years in various and sundry towns, counties and states. He once worked for the Fort Worth & Denver road as a member of a bridge crew, but broke his hip and spent several months in a hospital at Forth Worth, where he was named "Grit" by his favorite doctor on account of the grit he displayed. He later drifted back to North Texas and finally hit Bog Waggoner for a job. He is a Baptist in belief, and he thinks all bootleggers who sell booze at $25 a quart should be hung as enemies to freedom-loving society.

In the picture Uncle Wash looks like he is holding up a corner of the former home of Bog Waggoner, but this is not true. He was just a little flustered when Photographer Stevenson of Wichita Falls told him to look pleasant. He thought he always looked pleasant, and resented the inference. One producing well is shown in the picture, near at hand, and in the distance are numerous derricks, many of them on the Waggoner land.

Yes, thank you, Uncle Wash is very well pleased with life as he is living it, but he don't like to have to go to Wichita Falls to see the Waggoner family because he has to dress up—and he feels a whole lot dressed as he is in the picture. But if Mrs. Waggoner sends for him, he goes.

TIME, CALLS JUDGE, AS HE DISMISSES COURT

(Continued from Page 164)

Q. Did you play any with Mr. Broune?
A. A little.
Q. Did he win anything from you?
A. Yes, I believe he did.
Q. What did he win?
A. He won my pants.
Q. Did he take them?
A. Yes.
Q. How did you get home?
A. I don't remember.
Q. But you know that Mr. Broune is an exemplary young man?
A. Yes.
Q. Would you have taken his pants if you had won them?
A. Yes.
Dismissed.
Court recessed to summon additional witnesses.

Lack of Supplies Has Delayed Development of West Texas

THE drilling reports of the various companies in the West Texas areas show almost as many rigs and locations as drilling wells, and this situation has been unchanged for the past twelve months.

The burden of responsibility for this situation is largely the inheritance of the railroads serving, or attempting to serve, the various sections of the producing areas in the territory.

For more than a year it has been difficult for supply companies to get delivery of more than a small percentage of their shipments without delays running into weeks and months. In an effort to obviate this difficulty, most of the companies have provided their own sidings in the various fields, where cars can be unloaded with a minimum of time, and out of the way of the railroad company's regular traffic.

Embargo Favorite Order

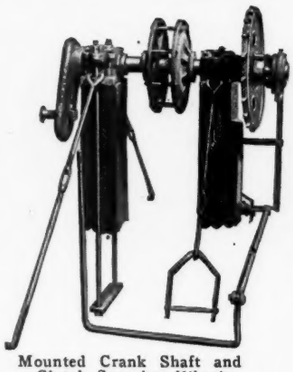
Even with private switches, the roads have not been able to deliver anything like the amount of materials ordered, and actually needed to carry on the drilling campaigns of the companies. Embargoes on car lot shipments of freight have been in effect a larger part of the time, and in order to get anything delivered to the field it has been necessary to get permits from the roads, necessitating additional time and annoyance. At times the congestion has been so bad that no permits would be issued, and freight was not moved into the field at any point.

While this situation may have been best for the industry at large, it has been annoying to the operating companies and supply men. Many of the leases in West Texas were taken with drilling obligations attached, and where companies were unable to get materials they could not fulfill their contracts with property owners, and have been put to considerable expense and trouble in meeting obligations.

The Silver Side

With the heavy new production from West Texas and North Texas fields, it is entirely possible that the situation might have become serious if supplies could have been provided to meet the plans of the producing companies, without any delays. The drilling programs outlined in West

(Continued on Page 168)



Mounted Crank Shaft and Clutch Sprocket Wheel

Rig Irons

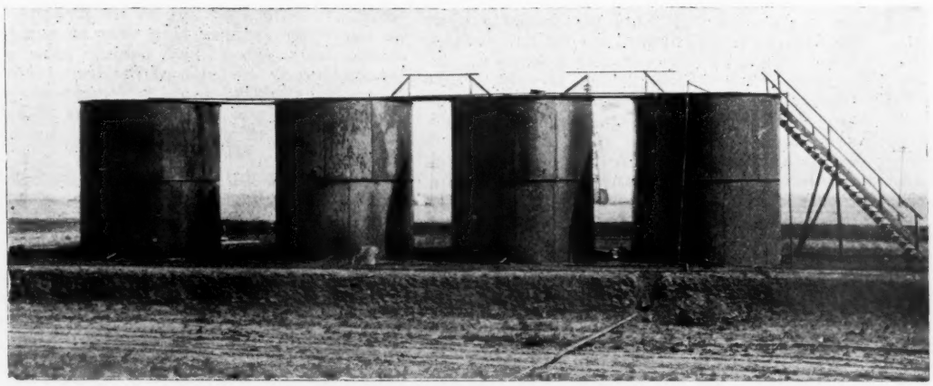
Standard and California Pattern

Any Quantity
Best Quality
Prompt Delivery

NO matter whether it is a Standard Drilling Rig, a Calf Wheel Outfit, or just a humble Brake Staple—if it's marked "Parkersburg" you may rest assured that you are getting the best quality; built to endure and to stand up under the punishing conditions of oil field usage.

Twenty years of experience are behind every set of rig irons we make. Every part must pass inspection before shipment; thus insuring the purchaser against grief in the field. No work is too severe for Parkersburg 5-inch and 6-inch "California" Pattern Rig Iron outfits, and they are furnished with either double tug or single chain driven Calf Wheel outfits.

Of course, supplying as we do every oil and gas producing field in the country, we make rig irons for all conditions.



Portable Bolted Steel Tanks

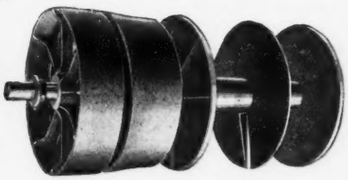
Capacities
65 to 5000 Barrels

The best of materials and workmanship make Parkersburg Tanks the leaders in all oil fields. No matter whether it is a clear cypress oil tank, a white pine water tank, or a steel tank for either oil or water—if it's a Parkersburg it is all right. Parkersburg tanks are built for long and useful life. They are designed to withstand punishment and to remain in service despite adverse weather conditions.

Parkersburg steel tanks, in addition to being long wearing and of superior construction, have the added advantage of being easily portable. They knock down and are readily carried over difficult country. They will continue to do their work satisfactorily in spite of many trips. Excellent workmanship makes them able to undergo treatment that would utterly destroy less well made tanks. Their design and bolted, leak-proof construction make it possible to change their size and capacity. Large supplies are always carried in stock and special sizes can be made up on short notice. Write us, telling what your needs are, and we will ship you the tank you want.

Sand Reels

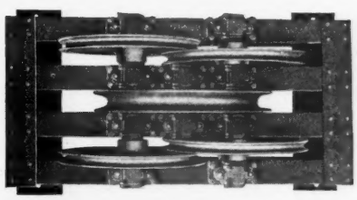
Wooden and Iron



Wooden, or iron sand reels, beveled or straight face, according to the locality in which they are to be used, and preference of the operator, can be had from us on short notice.

Iron Sand Reels are fitted on cold rolled steel shafts with pulley end tapered; all cast iron parts carefully machined, accurately moulded, and interchangeable.

All standard sizes, from 36-inch to 55-inch; one for your exact requirements.



Steel Crown Blocks

Adjustable or Rigid

Substantial construction.
Absence of fire risk.
Scientifically lubricated sheave trunnions.
Sheaves cannot jump out of frame.
Goes into place assembled for work.
Comes down, assembled, ready for next job.

Standard Drilling Rigs with Bolted Derricks, Portable Drilling Machines, Rig Iron and Calf Wheel Outfits, Wooden and Steel Tanks for Oil and Water (We have first class tank setters near you), Wooden and Iron Sand Reels, Steel Crown Blocks

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BRANCHES AT

OKLAHOMA— Blackwell, Okmulgee, Hominy, Walters, Enid
LOUISIANA— Shreveport
KANSAS— Augusta, Eldorado, Wichita
OHIO— Newark, Cleveland
WEST VA.— Clarksburg
TEXAS— DeLeon, Fort Worth, Ranger, Gorman, Houston

Damphools Says The Cable Man–Amateurs Retorts Rotary Driller

CONVINCING a West Texas driller of the advantages of rotary tools is about as easy as convincing him that Hades has a delightful climate. He is fixed in his opinion, and believes that he knows as much about drilling as the next fellow.

A driller from Goose Creek was looking over the West Texas fields, and passed a small railway station where a standard outfit complete had been unloaded on the siding. He had an idea that it was for use in the producing field, judging from the boiler, wire lines, etc. But he was a little bit off on the identification of the outfit when he turned to another prospector and remarked: "That sure is some new-fangled cleaning out outfit they use up here in this country."

The Outfit With a Punch

Another youngster who learned the oil game as a scout in the country where Lucey's rex rotaries and Hughes' cone bits are daddies, was visiting his cousin who was scouting for one of the major companies in the Ranger field. They went out together one day to make the territory, and along in the afternoon the home scout sent his cousin to a well across the road to get the dope. He came back and reported that they had dropped all the machinery in the hole at about 3000 feet, and were trying to punch it on through to the other side.

There is a peculiar creed among drillers, a part of their stock in trade. They know their tools, they know what they can do with them, and they don't give a continental for innovations, or for methods used in somebody else's field. Breaking in a driller to a new method of drilling is about like breaking a zebra to work in the same harness with a choice Shetland pony.

Amateurs and Damphools

That there are fields where the rotary is superior goes without saying. And in a rotary field the drillers think that the operators of standard tools are all amateurs. In a standard tool field the drillers think the operators of rotaries are all damphools. That just about sizes up the situation.

The structural conditions largely determine the kind of machinery to be used in any field, especially after the field is well defined. Where there is a soft or soil formation for the first several hundred feet without encountering any rock strata, the rotary can make a hole quicker than anything else. But where rock strata are near the surface, it is maintained by drillers that the rotary does not have sufficient power to force it through, and that nothing but a standard outfit is practicable. But the roller bit people deny this.

It is also maintained that in drilling new territory there is a chance of plastering off a possible producing sand with the rotary, and thereby losing what might otherwise be a commercial well. The efficiency of this theory is generally recognized in wildcat work, and this has been especially true in the development of the new territory in Central West Texas.

Rotaries in Use

A rotary outfit was used in a test in Brown County, with unsatisfactory results. The rock encountered near the surface was hard to negotiate, and the hole was never completed, after months of effort. A few rotaries are now being used in this territory by operators who have strong faith in them under all circumstances. One is being used in a test in Parker County, and another in Erath County. But they are very much in the minority.

As a rule it takes from 50 to 120 days to make a 3300-foot hole in the West Texas territory. With more than an average of grief, the time may run to six months, and it has taken as long as a year to complete some tests where bad fishing jobs were encountered. In spite of the time element, however, standard tools will make the majority of holes in the West Texas fields.

IN WRONG

Jagg—Why did you give up that job I got you as collector?

Wagg—Why, hang it, I owed money to nearly all the men I was sent to dun.—Minneapolis Journal.

BLUNDERER!

Boss (to the office boy)—Here! I don't want you. I rang once twice.

Boy—Oh! I thought you rang twice once.—Boston Transcript.

A LACK OF SUPPLIES HAS DELAYED DEVELOPMENT OF WEST TEXAS FIELDS

(Continued from Page 166)

Texas are of such a magnitude that their immediate execution would likely lead to an overproduction of crude that would be embarrassing, and that might have serious complications for the industry at large.

Thus it may be seen that while the shortage of supplies and poor railroad service have been expensive and annoying, they may have redoubted to the interest of the industry at large.

On the other hand, the same conditions that held down production also held down the provision for pipe lines and transportation and storage facilities, and these in turn would have taken care of any possible production from the territory and have distributed it to various refining centers outside the state.

Definite Plans Inaugurated

Only recently have definite plans been inaugurated to take care of the needs of the field by providing better transportation accommodations. A short line railroad is being built between Mangum, in Eastland County, through Eastland and into Stephens County. Another road of greater importance is connecting up the Katy branch from Wichita Falls to Newcastle, in Young County, with the Katy at Dublin, making through service from Oklahoma points, through Wichita Falls, Young, Stephens, Eastland and Comanche Counties, to Waco, and on to the Gulf Coast country.

With these lines in operation, the West Texas fields are scheduled for a more rapid development, and the supply dealers an elimination of a lot of the grief that has been theirs for the past year.

Once upon a time, as the fairy book says, Lee Young of Houston didn't own a string of banks, an interest in a growing producing and refining company and several other things that smack of worldly gain. But he did have a right smart little jag of money, as the story goes.

That was when things were happening over at Sour Lake, in the heyday of its first big boom. Lee Young went over to Sour Lake, and grabbed at Dame Fortune's forelock, put his dough into a hole in the ground and furnished the idea for the accompanying cartoon. When the stem had made its last turn, when the screen had been set and the bailer had made its last round and the hole rattled like the dry bones in a Philippine graveyard, Lee looked long and solemnly into the hole into which all his money had gone.

"Good-bye, you son of a gun!"

No, not all. He reached in his pocket and pulled out a dollar. That WAS his last dollar.

He gave it one fond look, and then slammed it down the hole. "Good-bye, you son of a gun," is the poetical way he is said to have bid it farewell. "I'll make it a clean job."

Then he went down town, borrowed four bits, and ate—well, we won't tell what all he got for that four-bit supper. These be high cost of living times.

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CLEVELAND, OHIO Citizens Bldg.	FT. WORTH, TEXAS 203 Ft. Worth Club Bldg.	PITTSBURGH, PA. Frick Annex Bldg.	SAN FRANCISCO, CAL. Mills Bldg.

General Office: **Transportation Building, Chicago, Illinois**

Frenzied Finance Goes Limit with Boom On

Almost a Liberty Loan in Money Invested

By B. V. ELLZEY

THE head of one of the major producing companies of the nation, speaking to a representative of this journal recently, asked: "Why don't you write a history of the oil game in Texas—the 'game' and not the real story of development; the game that has been played by the promoter and frenzied financiers? Such a chapter would be a gem in commercial and financial literature, and might serve as a throttle to the machinery that is taking millions of dollars of money from a credulous public and pouring it into the coffers of an unscrupulous few."

There are several reasons why such a history cannot be written and published. History must of necessity be accurate in detail and give definite proofs and typical examples to establish its tenets. History, as such, deals with particular instances and points out the maneuvers of individuals and corporations, calling them by name. Such a chapter on the activities of oil companies, so called, and promoters in Texas during the past two years that would set up a howl and start a series of litigation that could never be quelled.

Any discussion of the frenzied finance in Texas oil that has raged since the new fields of North and West Texas were developed, therefore, can be given only in general, sticking close to the facts as they exist but scrupulously omitting reference to particular companies or individuals.

Almost a Liberty Loan

It has been estimated by authorities in the realm of finance that $500,000,000 has been put into stock companies in the past twelve months in the United States. Of this amount a large percentage of the money has gone to companies engaged in oil and mining operations. Texas has long been the favorite state for these companies, and the new discoveries of oil in the north and central western part of the state is responsible for most of it.

Stock in Texas oil propositions has been sold from coast to coast, and so much has reached the financial capital of the country that the federal district attorney of New York and the federal trade commission have busied themselves to obtain information of fake propositions with an idea of entering criminal proceedings against those who have clearly defrauded the public. This story is not written as evidence to be used by these forces, though evidence is not hard to obtain in Texas.

During the early period of the game in Texas, efforts were made by the Federal Reserve Bank system, the governor and publications of character to warn the public against reckless buying of stocks in promotion companies. The capital issues committee went so far as to demand proof of the assets of companies offering securities to the public, where their capitalization was as much as $100,000. This was easy to evade, even while the ruling existed, and promotion companies dropped their capitalization to slightly less than $100,000, it being easy to promote a number of companies on the same proposition. "Blue sky" laws and legislative restrictions have been as easily evaded, and the "common law partnership," or companies operating under a declaration of trust, has taken its place in the business of the country, often, it is true, conducted on a strictly legitimate scale.

One North Texas city has something like 500 such organizations and every city in the state, and even the villages and hamlets, are infested with them.

Many Good Companies

That there are some real oil companies that have sold stock to the public goes without saying. Some of the organizations in North and West Texas have paid dividends to their subscribers several times the amount of the stock investment. These cases may be said to be exceptional, however.

Texas people cannot be accused of being "easy" in swallowing the bait of the promoter, and not only the bait, but line, pole and-all, as the sucker list is not confined to Texas but to the whole country. Even the proverbially conservative investors of Wall Street are loaded up on stock in Texas oil propositions, and may hope to break even on their investments only in case of a calamitous paper famine.

The Four Classes

In general, promoters may be divided into four classes, as follows: (1) Honest but unprofessional. (2) Dishonest and unprofessional. (3) Dishonest and professional. (4) Honest and professional.

These classes cover the whole gamut, although it is seen at a glance that they are arranged in what may be the numerical order of their importance. This classification is not restricted to producing companies, but is intended to cover the activities of all flotation propositions in the oil country, whether producing, refining, transportation, marketing, holdings or trafficking.

The honest but unprofessional promoter may be fortunate and get actual profits from the investment. If profits are obtained, however, it is to be credited to good fortune rather than good management. By far the greatest portion of promotion company directors are not skilled in the work which they propose to direct, and are therefore unprofessional.

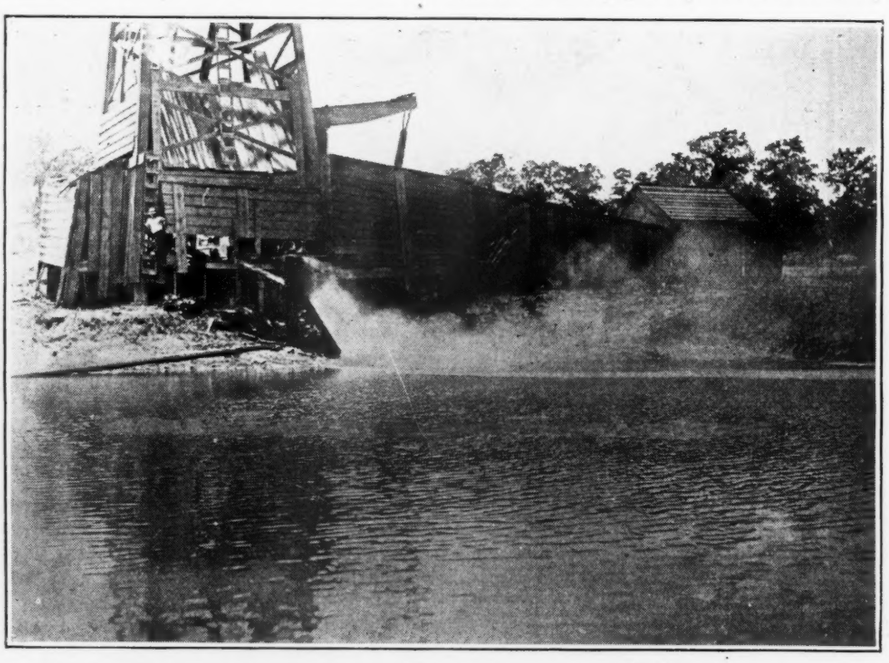
The second class embraces those unscupulous promoters who are unskilled in the oil game, but whose conscience absorbs all guilt, and who will take the money from small investors by misrepresentation or otherwise, and whose chief concern is to stay out of the grasp of federal authority.

There are a lot of real oil men, men who have had experience in the various branches of the industry, who have seized upon the opportunity afforded by the big fields of Texas to feather their nests for the remainder of their lives. Properly protected by law, and carefully watched, these operators may be in positions to make fortunes for their investors.

Under class four is grouped those who are legitimately trying to give the investor a run for his money; those who know how to operate a piece of oil property, and who are on the square.

French Financing

A story is told in French financial literature of how one big Paris bank found its resources practically depleted at the close of the Franco-Prussian war. This institution had to have rehabilitation, and had to have it quick. A Frenchman, well schooled in skyrocket finance, solved the problem. He organized a company to explore for the Kidd treasures in the South Sea Islands. Of course he knew where vast fortunes had been secreted, and only needed money to finance an expedition to recover this wealth. His plans were like this: The Paris bank that needed funds on which to operate agreed to act as treasurer for the funds. It further agreed to guarantee the investment and to repay every cent of the money



Pictures of wells like this one, a Ranger gusher, have sold millions of dollars worth of stock during the past year. "All you need is a few photographs, credit at a printer's, and nerve," said one promoter.

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invested by the public at the expiration of a period of five years in case the Kidd treasures were not found. The public fell for it. The company was floated. The bank got the use of the money for the period of years, and at the expiration of the time limit it was easily able to repay those who had bought stock in the South Sea Island bubble, and had its own affairs in good shape in the meantime.

A Texas Counterpart

This story has its counterpart in the Central West Texas oil fields. It may have its counterpart many times, but this one instance has come under the observation of the writer.

A company having the royalty on a wildcat lease in West Texas was capitalized for $1,000,000. Its royalty was probably worth $1,000 at the time. It agreed to let the public in on the proposition to the amount of $500,000. This was at a time when the government was floating its bonds for the prosecution of the war. So this company made a North Texas bank its treasurer and further agreed to spend all the money received from the sale of stock in government bonds. It was further agreed and guaranteed that these bonds would be put in charge of the treasurer bank, and that in case the company's dividend in five years did not amount to 100 per cent, or the full amount of the investment, the initial payment for the stock would be returned by the bank, dollar for dollar.

A proposition like that had its appeal. It was guaranteed, and the money was to be used to buy government bonds. It was also a safe way to get in on a big oil proposition. From the bank's viewpoint it was easy to unravel the mystery. Government bonds are exceptional collateral; the money that could be borrowed on $500,000 worth of government bonds could be used to good advantage by most any financial institution for five years—and of course the public could not use.

All Have Been Tried

There is no principle of high finance that has not been practiced in floating companies seeking to produce or refine oil in Texas. Some of the organizations have unloaded their securities, and dropped out of existence. Others have drilled for oil, accidentally got it, sold it and failed to make any reckoning with their stockholders, according to charges made by the investors themselves. Companies have been promoted on half acre blocks and capitalized at a figure that could never be reached by dividends, even under the most miraculous conditions. Some have secured leases 50 and 100 miles from production, with no more indications for oil than might be found in the most prosaic cotton field of Texas, and have succeeded in issuing their stock to the public.

And not alone has the promotion of companies of questionable security been in the production end, but some of the most fallacious schemes have been for the refining of oil. To organize a company for production, it is at least necessary to have a lease of some kind somewhere. To organize a company for refining, it isn't necessary to have anything. The printing company may even be induced to produce the first literature for the company on a charge account. If the stock salesman has the price of meals for the first day or two, and can afford a few cigars, he is well started, and may have a $1,000,000 company by morning. He may build cities and pipe lines, and have hundreds of tank cars, and market connections all over the earth, and the latest methods of getting gasoline from crude, methods that no one under Heaven knows about except him and his refinery superintendent—and his personal check may not be good for a drink at the corner drug store.

The Lamentable Feature

The lamentable feature of the whole promotion game is the fact that people buy the securities of the stock companies who cannot afford to lose the money. The denomination of stock units is all the way from 10 cents to $100, but the most of them are either $1 or $10. This puts them in reach of the person of small means, and everybody from the shine boy to the mayor has his pockets bulged out with gilt-edged paper, all artistically decorated with oil wells, refineries and trains of tank cars, and in some cases with bags of gold stacked as high as the derricks beside them.

A laboring man came into one of the offices of this publication and asked for information about the activitcis of certain promotion companies. He stated that he had been saving his few dollars a week ever since he and his wife were married, and had decided that he'd make some money quick. So he picked out several, eight, to be exact, oil companies that had acreage in what seemed to be good territory, and bought stock in all of them. He had been watching the reports in the oil journals, and knew that six of these companies had production. The seventh had a well at the top of the sand, and the eighth had neevr been heard of since he gave its salesman his money. He had never had a line of advice or a penny of dividends from any of them.

Who Buys the Stock?

The writer chanced to look over the subscription list of one company, and found that it was made up, not of the bankers and moneyed men of the city, but of postal clerks, stenographers, bookkeepers, salesmen in department stores, with a few physicians and lawyers on it. It represented money that had been earned, not won, and that had cost months and years of sacrifice and deprivation.

Not alone have the promoters gutted the public, but they have made it difficult for the legitimate company to operate. The public judges the "oil industry" by this element with which it comes intimately into contact. The prejudice which prevails, much of the feeling that oil men are all crooks, and that all companies are to be preyed upon whenever the chance affords itself, is due to the impressions left by the faker and the salesman of worthless stocks.

No Care Hath He

The fake promoter cares little about what he has to pay for his acreage, supplies, labor, or anything that is needed in the carrying out of his plans. That breaks up the even tenor of the oil field development, gives inflated values to everything used in the fields, makes it embarrassing for the company that actually is trying to develop the territory.

There is some psychology in the whole promotion craze. The country has passed through a strenuous era, sharpening man's ingenuity as well as his spirit of adventure. The gambling spirit is strong in oil promotion, and the gambling spirit has its appeal now as never before.

Then again, the country is full of money. Three years of war in Europe before the United States got into the conflict, gave a wonderful opportunity for manufacturers in this country to clean up on goods for the warring nations, and the profits went not only to the manufacturers, but to the producers of food, transportation facilities, and all the necessities of life. This vast wealth coming into the country at one time, was more than the people had been accustomed to, and a lot of it found its way to the laboring man.

And Liberty Bonds

Then came the government securities, when twenty to thirty million people became owners of bonds, many of them having never owned such securities before. There was unheard of wealth in the land.

On top of all this, money began to depreciate in value. Its purchasing power was cut into fourths and then into halves. All these facts together created a situation that made it easy for the man promising fabulous fortune for a few dollars investment or in exchange for Liberty Bonds, and the promoter literally cleaned up.

SCOUTING in the far West

Photo courtesy Harry Alexander Miles

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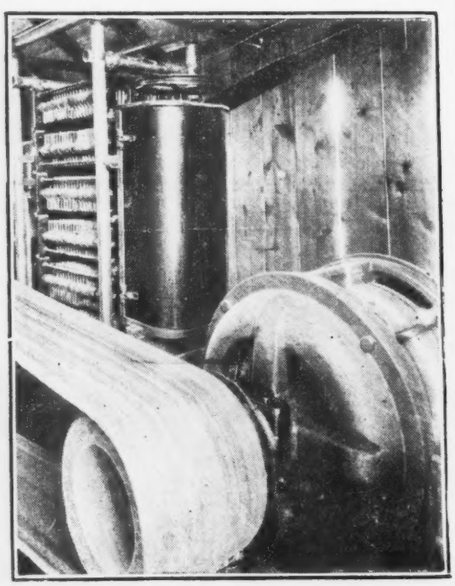
Electric Power Cuts Production Cost in New Townsite at Burk

ELECTRIC power for pumping of oil wells in the townsite of Burkburnett has been thoroughly tested and has been found most convenient, without fire hazard, easily handled, a very steady power, non-explosive and saving in man power.

Early this spring of this year a transmission line was run to Burkburnett by the Wichita Falls Electric Company, and on the first of September 35 wells were being pumped with electrical power. The users are more than pleased at the even power furnished, and this one feature is spoken of as frequently as the other good points. It has been pointed out that the wells pumped electrically appear to hold up well and make a splendid average production week after week.

The erection of the transmission line necessitated considerable expense, and the users of the power made an advance to



the company to assist in defraying the first large expense. This advance is being paid back in four equal payments from time to time. Arrangements are rapidly being made to furnish the same service to the Northwest Burkburnett field, but before this could be done the transmission line had to be made more powerful and the line continued four miles to the new field.

The pictures accompanying this article show the installation, which is rather simple, after all, without any hazards. In one picture is seen the motor and control, the belt connecting with the power jack. The second belt in the second picture extends to the large bull wheel outside of the shelter erected to protect the electrical appliances. The pictures show the installation at the well of the Kribs Oil Company on block 28 in Burkburnett townsite.

A Believer in Electricity

H. C. Kribs, president of the Kribs Oil Company, is a firm believer in the use of electricity in the oil fields, and has proved by actual experience that his belief is well founded. When his well last March was about ready to drill in, he installed the electric motor and other apparatus and used this power to drill in the well, swabbed with the power for 28 days, and since that time has been pumping with electricity.

According to Mr. Kribs, the cost of his installation was in round numbers $2000, the pictures showing the investment. He uses a 15-30 General Electric motor, developing plenty of power. His bill for the month of April was $162.30, the month of May $166.80, and it jumped to $210 for the month of June; but during this month he was pumping a second well from the same machinery. This shows an increase in expense of but $44 for power to pump a second well for 30 days.

Cuts Operating Cost

The services of but one man is required for each watch at one well with the electric motor, while two men are the least a steam pumping plant can be operated with. Mr. Kribs employs two men on each watch with two wells on the pump, as it would be a little hard for one man to keep close watch on the motor, machinery and two wells. Other well owners agree with Mr. Kribs.

The cost of equipment for pumping one well with steam power would be around $2000, the same as for the electrical power, but equipment for pumping with a gas engine would be more. Fuel would cost more for a steam engine than the electrical current for the motor, and two men's time would be required. With the steam engine water would be another item, and that is rather an important item in Burkburnett. Water from two shallow wells is now selling at Burkburnett for $5 a day—a reasonable price in the oil city.

Mr. Kribs says his well swabbed an average of 200 barrels daily for 28 days before the well was placed on the pump. The last two or three days the well was on the swab it was making around 100 barrels, but for several days after going on the pump the production increased to around 175 barrels a day. For weeks it averaged 150 barrels a day, and at the first of September was making close to 120 barrels a day. This is a better average than can be found among the old townsite wells at Burkburnett, and Mr. Kribs feels that the electrical power had much to do with the production of the well.

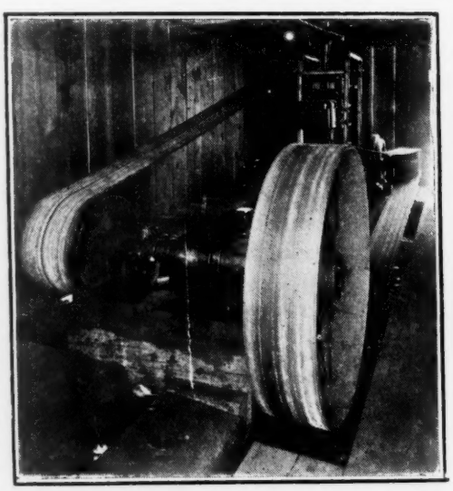
Power Steady

The electrical power is smooth and steady with no jerks at all. It is a straight, steady power that shows up in the production where a pump is kept in first-class shape. With steam power there is a jerk and the power is not steady. Mr. Kribs drilled two shallow water wells when he started to drill his well, and after installing the electric motor he had no use for the water from the wells. It is now being sold for $5 a day, which helps to pay the man looking after the oil well. The gas is also being sold to a casing-head plant, bringing in further revenue.

Reduces Fire Risk

There have been frequent and costly fires in the Burkburnett oil fields, but never at a well being operated with electrically driven machinery. The frequent fires, the escaping gas, the oil about on the ground, and the fires under the boilers at wells where steam was used, created such a danger of fire that insurance companies cancelled their policies at Burkburnett and the business and oil men had to stand their losses. With the use of electricity growing and after the town had been cleaned up, the insurance companies show a disposition to begin doing business again.

The use of electric lights in the field is becoming common, and aside from the convenience the danger of fire is still further reduced. Every week finds some oil man convinced that the electrical way is the best, and he asks for service. A greater number of wells would be served if conditions were not so congested and labor so scarce. Connections cannot be made immediately upon request, and at this time a number of well owners are waiting for a transmission line to be run to their lease. By the first of the year many wells in the Northwest Burkburnett field will be using



electrical motors for swabbing power and later for pumping.

The companies using electrical power at Burkburnett on September first were as follows: Citizens Oil Company, Big Pool Oil Company, Block Six Oil Company, Wade Oil Company No. 1, Climax Oil Company, Davis Willis Oil Company, West Side Oil Company, Great Dome Oil Company, Gobblers Oil Company, Coleman Babcock, Morris Oil Company, Bishop Evans Oil Company, Kribs Oil Company, O'Boy Oil Company, Kirby Oil Association, Conner & Kinnard, James A. Swindler, Lewis Home Oil Company, Cole Oil Company, Burwich Oil ompany, Heine Meyers, W. E. Thomas, Victory Oil Company, Wade Oil Company No. 2, Ginsite Oil Company, Russell Sanderson, Painter & Fenton, Paris Wichita Oil Company, Bank Oil Company, Bank Oil Company No. 2, Mann Ilsing Oil Company, Western Burk Oil Company, Harrison No. 1.

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The Industry's Pioneer-Sleuth—the Scout

A tribute to the hard-workingest member of the force (sometimes)

BY B. V. ELLZEY

After reading the accompanying, one is almost convinced that Ellzey has met a few scouts, and that possibly—possibly, now—some one of those scouts might have had a hand in telling him what to write. —Editor.

THE development under way in the Central West Texas area covers such an empire in extent that the scouting problem has been one that has caused more than a usual amount of worry and expense.

As in all new fields, it is essential that an expert information service be maintained for the successful operation of the various companies. The company that has kept a man in each section of the territory where important development might take place at any time, has paid heavily for the service, but has been forced to the issue in order to properly protect itself in leases and keep in close touch with the development under way in all parts of the territory.

A study of the various methods by which the major operators keep in daily and hourly touch with their field forces is interesting, from the standpoints of efficiency and economy.

During the past year there have been 13 companies with scouting organizations in West Texas, ranging all the way from one or two men in the busiest centers to a complete force with men in every county where there is any activity in leasing or drilling.

Collusion, Nay, Nay

While every company has its own system of gathering news and statistics, and keeping in touch with new development, there is a general conformity of plan and achievement that is remarkable. There is also a conformity in the information furnished by the various scout organizations that would lead a mind like that of Pinkerton to conclude that there is collusion at some point.

A prominent operator is credited with the statement, in defining the duties of a scout, that the scout stands around the well and gasses and watches to see if the well also gasses, and sometimes sends in a report of progress. This same operator, however, maintains one of the biggest scouting organizations in the industry, and one of the most efficient.

A Mysterious Personage

The scout is usually regarded as a man of mystery. He is supposed to know the status of every well in his district, the pedigrees of the drillers and tool dressers, the pet name of every tool around the rig, the exact location to the last foot of every derrick and new location, the ownership of every lease, the amount of production from every well, the details of storage, transportation, supplies, quality of oil, stratum of production, conditions of the roads and weather, financial deals pending, details of unborn plans of competitive operators, and other simple details of oil field operation.

How well he succeeds in his tasks is indicated by the volume of data that each scout sends to his company each week. He must be the workingest devil in the field, or the best diplomat out of the peace conference, to get by with what is expected of him. If somebody else gets a report before he does, there is a cussing, and if he gets it first and is not exactly right in his calculations he gets a cussing, and if he doesn't get it all he gets a cussing, and the fact is he is a cussed man on all sides. He is about the least appreciated and hardest working devil on the force, and some day the various companies will begin to understand his position better and may possibly come to O. K. his expense bills without asking for detailed explanations and verifications.

Private Lines

Many of the companies with executive offices removed from the big show have put in private telegraph and telephone lines to the fields, and are in communication hourly with the scouts or field men. Practically all the large companies get daily reports of activities. Some require scouts to send each day a status of the wells visited. Others get daily reports on all wells in a district that are nearing completion or at depths that make them of more than usual interest. Any new development of any character is wired to headquarters, and all scouts make a weekly report of the operations in their districts.

These reports sometimes carry only the status of the drilling wells, new locations and completions. More often they also show the storage of the field, lease transfers, progress of various construction works, and general information of interest to the operating company. The form of reports on wells is largely the same. The scout ticket provides for the complete location of the well, this information being given only in first reports—ownership of well, depth and status. If the well is nearing completion, the drilling formation may be shown.

"The Scout: "And I reported that well dry yesterday!"

(Bert Blessington, who made the above cartoon, confessed that every time he draws a picture of a guy in hard luck, he invariably uses his own face and physique. Gents, introducing Mr. Blessington as a scout.—Editor.)

Systems Vary

Some of the companies have these scout tickets sent to the headquarters either daily or weekly. Others have provided stenographic help for their scouts, and a summary only is sent to the company, daily or weekly.

In either event, a summary of the operations in all the different fields is prepared by the company for the company, and becomes a part of the permanent records of the company. One organization keeps a set of cards, a card for each well, with blanks for about 50 reports to be inscribed. These cards are posted up weekly, providing the company's summary from the scouts' tickets.

Scouts on Speaking Terms

A system of balances and exchange has been established among the companies, and it is reported that they got the tip from their scouts. It is well known that scouts are usually on speaking terms with each other, and it may be that they sometimes meet in secret places, etc. At any rate, the scouting departments of the companies are on friendly terms, and a system of courtesies has been developed that is going far toward cutting down the expense of scouting forces, and insure a complete report from every district every week.

For example, in a county where there are 30 wells drilling, none of them at depths which would justify each company keeping a detective on the job, one company will get reports on the wells and will exchange this data for similar reports from some other district. In this way, the companies have been able to keep complete and accurate records at a minimum of expense.

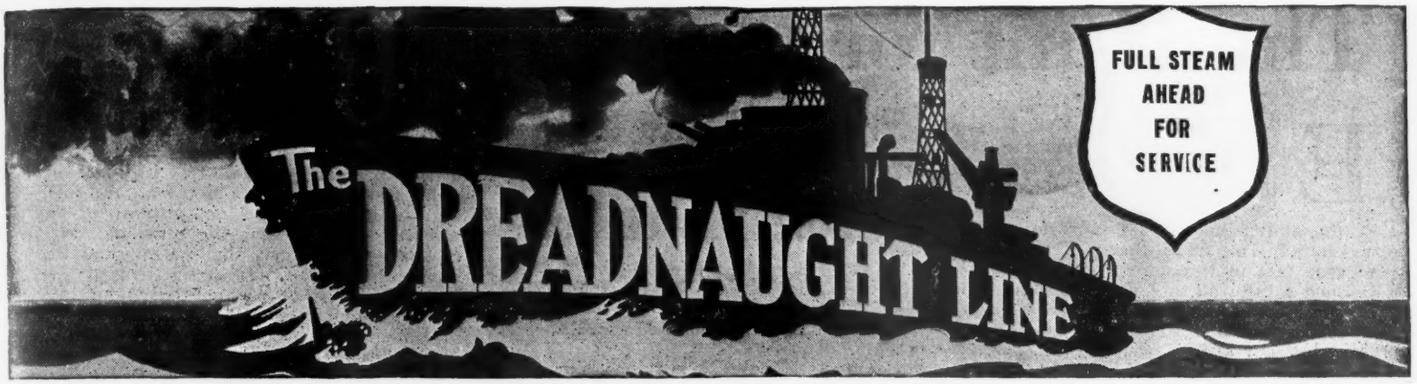
A Busy Place

The scouting department is one of the busiest places around any company headquarters. It may be called a scout department, intelligence department, sub-surface intelligence department, or any other name, but it all means the same thing. It is the machinery by which the company obtains the information of what is happening in the various fields where it is operating. It is a machine that always gets production, and the bit that plugs through all the formations of logs, figures, statistics and what not is the lowly scout. He may be a fish tail, a roller bit or a standard tool, but he gets there.

OVER THE TOP

When Clint Wood didn't have quite enough money to build ten-story buildings as an entertainment, he was operating down in South Texas. Wanting to get some leases near a wildcat well which he figured was a good one, and not wanting to purchase the leases unless the well really proved up, he sent a "scout" over to the well. "Get a job on the rig and stay with it until something happens," he told this scout. "Then as soon as the well comes in I want you to wire me. However, use code, and this is what you must say if the well comes in: 'Pine trees grow tall.'"

For about three months Clint heard nothing from his scout. Then one day he got a wire which read as follows: "Pine trees grow tall and the oil is shootin' over the top of the pine trees. (Signed) Your Scout."



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The Hunt for Oil in New Mexico

State Is Now Being Prospected With Vigor; It's History

By B. V. ELLZEY

Since 1911 New Mexico has had oil flurries, but not until the early part of this year was the importance of the prospective territory there fully realized. Since that time New Mexico has been the geologist's Paradise. "I saw more geologists in New Mexico in one week than I have seen outside of that state in a month," said one lease man. With the development under way it may not be too much to hope that the next twelve months will see the opening of a new field.—Editor.

EFFORTS to find oil in New Mexico go back to 1890, when the first test in the state was made near the town of Farmington, in the San Juan Basin, northwest part of the state, and a small amount of gas was found. In 1907 another well was drilled to 2700 feet in the same vicinity, and developed a little oil, but not sufficient to be of commercial importance. The well developed a flow of salt water.

During the past few years renewed efforts have been made in practically every section of the state, and test wells are being made now from Aztec to Union County, and south to Eddy County, there being 26 wells reported under way at the present time.

This renewed activity is due to a combination of circumstances. The development of the fields of West Texas aroused interest in the neighboring state, and wildcatting extends in Texas as far as the New Mexico line on the west. The high price of crude during the past three years is also a factor in stimulating efforts for production, not only in New Mexico, but throughout the country.

Leasing State Lands

On March 17 the New Mexico legislature passed House Bill No. 186, introduced by A. H. Carter of Magdalena, providing for the leasing of state lands for oil, gas and mineral exploration and development, and immediately the state land office became swamped with applications for leases under the new law. These are the main contributory causes for a campaign of wildcatting in New Mexico now that is second to no efforts in undeveloped sections of the country.

Several of the major companies have recently taken large blocks of acreage in the state, especially along the Texas side, and tests are being made all the way from Clayton to Carlsbad. Many of these tests are by stock companies or individuals, but some of them are financed by major operating companies in other states. The joint test of the Gipsy, Twin States and Ohio Cities Gas Company, northwest of Santa Rosa in Guadalupe County, is so far one of the most interesting tests of the state. These companies have leases covering a big area in this part of New Mexico. In Union County, north of Guadalupe, a gas sand was recently found at about 1000 feet, and drilling is being continued. The Empire Gas & Fuel Company, Cosden Oil & Gas Company, Sinclair interests, the Twin States, Gypsy, the Ohio Cities Gas Company, and other nationally known producing companies have protections in various counties along the eastern edge of the state, and scores of smaller companies are buying acreage, organizing drilling companies, or speculating in leases.

Thoroughly Geologized

New Mexico has been geologized. Possibly no state in the union has had a more detailed study by the rock scientists than New Mexico. A geologist returning from there during the past summer said that he met more real geologists in New Mexico than he had ever seen in one territory at the same time. The surface conditions are being studied in every part of the state, and by men whose standing is good in the profession, and whose clients are amoung the best known producing organizations in the Southwest.

And from the standpoint of geology, New Mexico has good prospects for oil production. The Permian and Pennsylvanian sands both underly the eastern part of the state, and at depths which will make their exploration profitable. It is believed that the Permian will be found in Guadalupe County at about 2500 feet, and the Pennsylvanian at slightly more than 3000 feet. Going south, drilling will not have to be so deep, and oil showings have been found at less than 2000 feet in the Carlsbad section. A well known geologist, whose name is used by more operators in the Southwest, likely, than that of any other man in the profession, made the statement recently that if oil is not found in paying quantities in New Mexico, geologists may as well pack their bags and hunt a new profession.

Leases are selling at $5 an acre in Quay, Guadalupe and Union Counties, and in the Pecos Valley territory in the southern part of the state transfers have been made at a higher price, especially in small tracts. Roughly speaking, the whole state is under lease, although of course there are scattered tracts in every county that have not been taken, many of them being claims of settlers that have not yet been proved up and patented. It is estimated that two-thirds of the total acreage of the state is under lease.

A brief history of the explorations for oil in the past will be of interest as a background for the development that is now under way.

San Juan Was First

The San Juan Basin was first tested for oil about 1890. Seepages of oil and oil springs in this territory gave evidence of production, and a gas well was drilled near Farmington. The next test was made to 2700 feet in 1907, developing a small showing of oil, and the well was lost to salt water. In 1912 several shallow tests were made in McKinley County, near Seven Lakes, and oil was found in limited amounts. In 1910 the Mattox well was drilled in the same section to 1750 feet, where an oil sand was found, and tools were lost in the hole and covered by a bad cave. The San Juan Basin Oil Company drilled near the Mattox test in 1914, and got a showing of oil at 2200 feet, and drilling was discontinued on account of the war conditions. Near the town of Aztec, in San Juan County, shallow oil sand was found at 850 feet, and again at 1150 feet, the first being of paraffin base and high quality, and the second showing being of a heavier oil. Work was suspended on this hole last year on account of being unable to get supplies.

At Flora Vista, six miles from Aztec, the Mesa Verde Oil Company abandoned a test at 1150 feet in 1918, with oil in the hole. Casing trouble made it necessary to start a new test, and this hole had about the same history as the first one, getting a showing at 850 feet and another at 1150 feet.

The prospective area in the San Juan Basin is about 50 miles long by 10 miles wide, extending into Colorado on the north and Arizona on the west, a part of it being in the Navajo Indian reservation. The lack of transportation facilities would make the development of a field here very difficult, although a highway is being projected from Farmington to Alberquerque, and this will bring the district into contact with railroad service.

The Toltec Oil Company was organized several years ago to drill for oil on state lands, being obligated to make twelve tests, and was capitalized for $300,000. Two wells drilled near Santa Fe, the state capital, failed to show anything significant, and drilling has also been in progress by the company near Roswell and Lamy. The company has recently renewed its leases, and has about 300,000 acres in its control in various parts of the state.

Pecos Valley

In the early days of the development of the Pecos Valley for agricultural purposes, a scarcity of water was found to be an impending peril. C. B. Eddy, J. J. Hagerman and others undertook to find a supply of water, and called in the services of geologists to find a water structure. Artesian water was found in several places, notably Roswell, Artesia, Portales and other localities along the course of the Pecos. In searching for water, the geologists are also said to have become convinced of the presence of oil, although this was given little consideration at the time.

The Pecos Valley was settled, a railroad built north and south, thriving towns grew up, and finally an oil boom started in Eddy County in 1901. A test was made three miles west of Carlsbad to 1300 feet, the money of the company was all spent, and the well was abandoned.

In drilling for Artesian water around Artesia, Dayton and Lakewood, oil indications and showings have been found, but water was of more interest to the home builders. On the Brown tract, near Dayton, a water well was practically ruined by oil. A packer was set, the water cut off, and 40 to 50 barrels of oil was pumped from the well.

In 1912 California people drilled a 1100 foot hole near Dayton, and it was dry. This rig was later sold to W. H. Andrews for a deeper test. Later the same parties drilled a duster northwest of Carlsbad, at 1500 feet. In the meantime, Andrews and associates had made a location east of Carlsbad, and drilled to 2800 feet in 1914. At 2400 feet a salt bed was penetrated, and

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a little deeper salt water was found. This was cased off, and plans were being made to drill deeper when Andrews fell a victim to the "flu."

Several other tests have been made to shallow depths in the vicinity of Lake Arthur, Lakewood and Carlsbad, but none with satisfactory results. Near Roswell, C. C. Tannahill et al made a test to 2000 feet, with no results. Other tests in this section have recently shown good indications for oil, and a well drilled there during the past months is said to have showed several oil bearing sands, no one of which was commercially valuable.

Other Wells

The McGee well in Quay County near Tucumcari, is being drilled in the name of M. H. Hagaman of Ranger. It is understood that several of the larger companies are co-operating with Hagaman in the test.

Reese Brothers of Pittsburgh have a rig on the southeast quarter of 25-13-35E, and will make a deep test.

There is a location for a test on the northeast quarter of 14-2N-27E.

W. F. Funk of Sisterville, W. Va., contracted to begin drilling by September first on 32-20N-31E.

Wells are to be drilled near Portales, Kenna and Loving. A test is now under way near Clayton, in the northeastern part of the state, and another one is drilling at Des Moines.

The Ohio Cities has been placer filing in New Mexico during the past few months.

The Producers and Refiners Corporation of Oklahoma has made a location for a test six miles west of Carlsbad, 22S-26E.

The Commonwealth Oil & Refining Company is preparing to drill in Lincoln County, in section 21, twp. 11, range 18E.

In Union County the United Oil Company is drilling, and has already provided storage facilities.

Clovis parties are drilling at Taiban, west of Clovis, and another deep test is being made six miles west of Roswell.

In all some twenty or thirty tests are being made, or will be made, in eastern New Mexico during the coming months. Without an unusual amount of hard luck, some of the drilling wells should be to depths that will largely determine the possibilities of their immediate localities within 90 days.

The following summary of conditions regarding state lands and public domain lands has been prepared, and is of value to lessors contemplating entering the state.

Oil Leases on State Land

It was a bright idea to provide that state lands could be leased for the exploration, development and production of coal, oil and gas an other minerals. House Bill No. 186, approved March 17, provides that such leases shall run for a maximum term of ten years or as long thereafter as mineral in paying quantities shall be produced from the leased lands. The minimum rental for oil and gas leases shall be $100 per annum, and the minimum rental for leases for other minerals shall be $25 per annum. On all oil and gas leases the state shall receive a royalty of not less than one-eighth of the oil and gas produced and saved from the leased lands, or the cash value thereof, payable monthly.

The commissioner of public land has power to prescribe the minimum rental, and the rental agreed upon shall be paid whether the lands are operated for minerals or not. Annual reports showing the details of operation must be filed. State lands heretofore sold, or which may be sold on any deferred payment plan under contract containing a reservation of mineral rights, the full amount of the purchase price not having been paid, may be leased as other state land; provided, however, the applicant for a lease shall file a satisfactory bond to secure the payment for damage to live stock, range, water, etc., to the purchaser. The purchaser may waive the right to require a bond.

Land Office Rules

Among the rules issued by the state land office under this law, are the following:

No lease shall be issued for less than a rental of $100 annually.

No more than sixteen sections shall be included in any one lease.

A rental of $100 shall be required for each four sections.

If leases are advertised and sold to the highest bidder, a rental of not less than $100 per section will be required, and not more than approximately eight sections will be included in any one lease.

One person may take as many leases as desired.

Leases will be made for not to exceed five years, with privilege of renewal.

Transfer fees are as follows: 640 acres or less, $4, and 10 cents for each additional section or fraction transferred or assigned.

To say the land commissioner is doing a land office business is putting it mildly. Applications have been rushed to the office until the office force is practically swamped. Possibly more than three million acres have already been applied for, and the end of the rush is not in sight. There has been no time to figure up the totals or the revenue that is coming in from oil and gas leases. As far as can be estimated at this time, applications have been filed for practically all the state lands in the following counties: Union, Quay, Curry, Roosevelt, Chaves, Eddy, Lea, Otero, Guadalupe, Dona Ana, Luna, Torrance, Sierra, while applications are rushing in from the remaining counties in the state. Some of the filings are speculative, no doubt. Still, much of the land is filed on with the intention of immediate operation to test out the locations.

Public Domain and Deeded Lands

But it is not only state land that is in demand. Leasing of patented land is general. This is a somewhat slow process in the farming sections, where the individual holdings are small. But in many localities great pains are being taken to obtain every foot of deeded land. Placer locations are used on the public domain. In the Pecos Valley men have for years made it a business to keep up locations for themselves and clients from the outside. The lease of lands in private ownership and locations on the public domain are filed with the county clerks. And in some counties the county clerks have their hands full recording leases and location notices. The fees, however, go to the county.

In the southeastern part of the state it is said that every foot of land from the west edge of the plains of the Rio Grande is under control through leases or locations. Much of West Texas is also covered with leases, from east of the Pecos River to El Paso.

Initial State of Development

Oil development is passing through the first stage in New Mexico. The geologists are investigating, the promoters are busy gaining control of lands, capitalists are being interested to provide money for test drilling. The geologists are already instructed to select locations for wells. Companies are being organized and financed to test out the locations. So far the real work of drilling has not started in earnest, though several holes are being sunk. But it would appear that before long active drilling will be general over the state.

LACKED PUSH

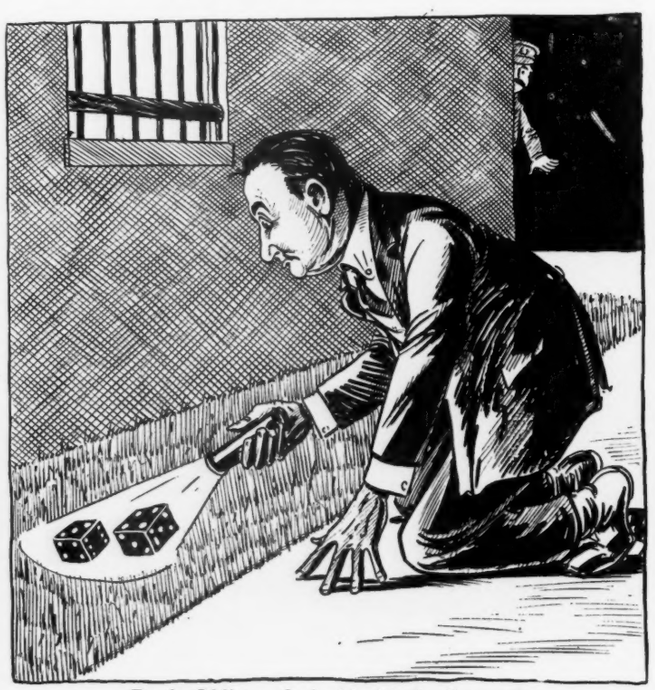
"Why didn't you send your man to mend my electric doorbell, as you promised?"

"He did go, madam; but as he rang three times and got no answer, he concluded that there was nobody home."—Boston Transcript.

AN ESSENTIAL DETAIL

Knicker—Well, my dear?

Mrs. Knicker—Can the League for Peace keep your neighbor from offering your cook a dollar a month more?—New York Sun.



Dock Oldham finds his black diamonds

(See Page 150)

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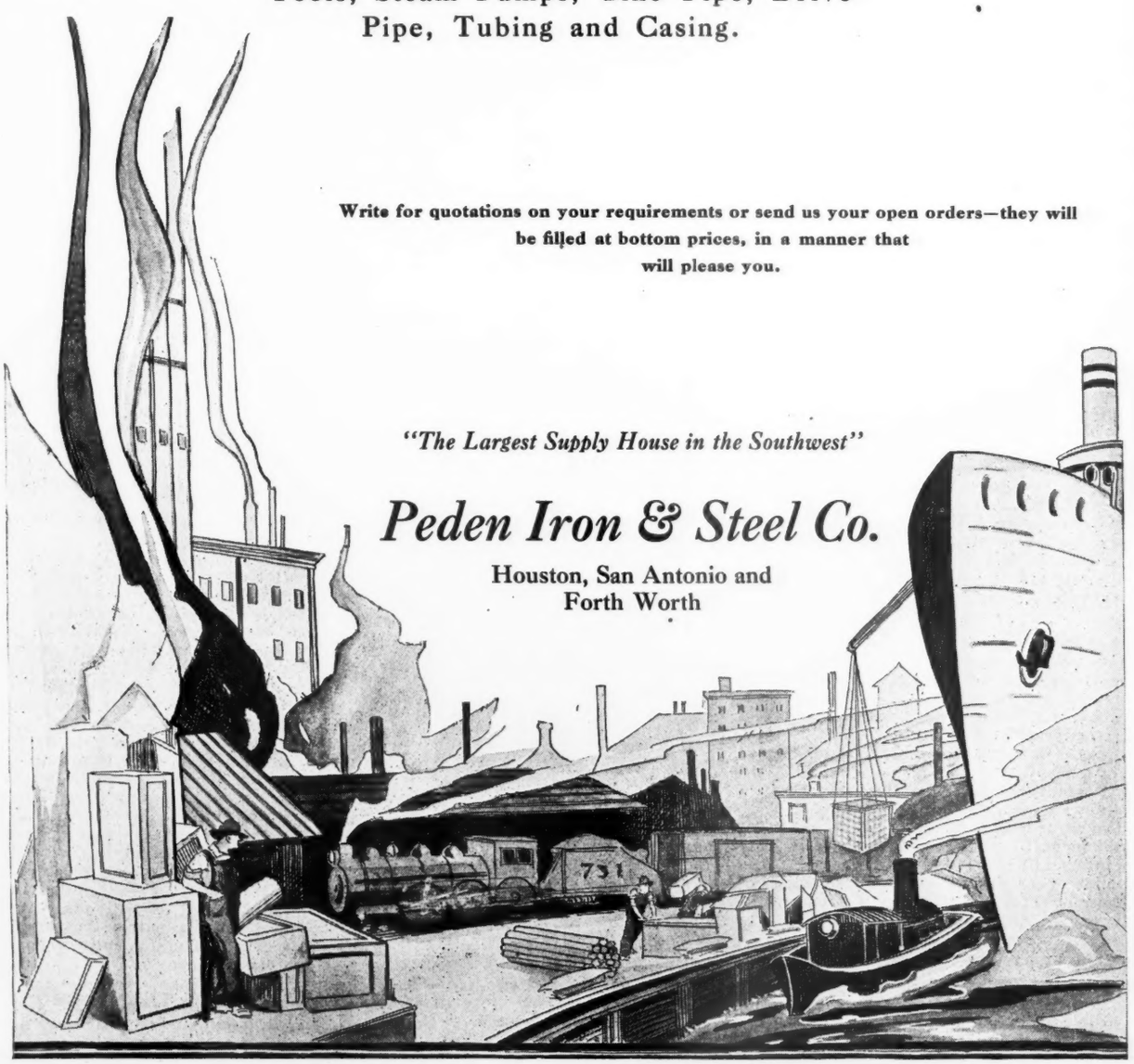

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Work of Texas Bureau of Economic Geology

Interest In Oil In State Meets Quick Response

By J. A. UDDEN

Although working under difficulties brought about by the size of the appropriation given it, the Bureau of Economic Geology of Texas accomplished much of practical interest during the past year and laid the foundation of even greater work which is now in process of being worked out. Dr. Udden, as head of the Bureau, is recognized as one of the leaders of his profession, and it was with pleasure that we received from him a letter stating that he would accede to our request for an article on the Bureau's work.—Editor.

ECONOMIC geology is a science of most promiscuous interlacing and ramifying lines of research where any discovery made in any line may have a bearing on almost any other related subject, scientific or economic. A report by Drake on the Colorado coal field has proved to be one of the best helps for oil geologists in Central Texas, and in the inland gulf plain region, the latest "vade mecum" for oil geologists has for nearly two years been Deussen's report on the geology and underground waters of the southeastern part of the Texas coastal plain. For those interested in the coastal oil field of Texas, Harris' report on "Rock Salt: Its Geological Occurrence and Economic Importance in the State of Louisiana," has been a source of some needed information.

We may say that it is impossible to make a geologic study of any area that does not have a bearing on almost every subject of economic interest pertinent to this area, and frequently also to the adjoining country. The information needed for a study of underground water conditions is largely the same as that needed for a study of petroleum possibilities. The same may be said for geologic studies of coal, of salt, or of gypsum deposits. It would evidently be a great waste to make different local surveys for each of these minerals. For this reason it has long been the practice, both with national and state surveys, to have as their first and main function the making of local detailed maps. Such is also a settled policy of the Bureau of Economic Geology. Naturally, under the present great demand for information on oil geology, the bureau has been prompted to select regions for such general study with some reference to the greater or lesser present lack of information on conditions affecting oil development. It has also been the purpose to select for earliest study areas presenting problems that are of somewhat general interest to the oil industries. Thus Dr. Beede has undertaken a general study of the section along the Colorado River, to complete the work begun by Drake more than twenty years ago. In the course of this work it was natural that he should make local observations on structures, such as was the case in Runnels County. Detailed work on structures must otherwise necessarily be a secondary matter in the work of the bureau, and must be left to the private geologist. It would take a small army of geologists to cover the state with such detailed work.

The detailed work by the private geologist cannot be done very successfully unless the general facts of stratigraphy on which local surveys are based are at his command. There is, therefore, a demand for general stratigraphic information which is very urgent. In response to this demand the bureau has within the last few years made important additions to the general stratigraphy not only on the Colorado, but also in the western part of the state. These are supplemental to the general stratigraphic information that was obtained by the Dumble survey and that has been worked out by Hill for the U. S. Geological Survey for the central part of the state. It is recognized that much more work of this kind is greatly needed.

Paleontological investigations are indispensable for the solution of not only the largest problems in oil geology, but quite often also of local problems. The fossils of Texas are altogether too imperfectly known. In the study of sedimentary rocks paleontology is an all-important subject. It takes a lifetime to make a good paleontologist, and it takes years for him to accumulate the materials on which he is to work. The contributions so far made by the bureau in this direction have been confined to the issuance of three paleontologic bulletins. It has ready for publication two more such contributions.

During the rapid development which has been going on for the last two years in the interior of the state, away from the Gulf, there has been a great demand on the bureau for help in identifying formations penetrated by prospect holes in different parts of the state. There are yet many prospectors who are satisfied with merely drilling a hole and testing out any sands that may appear, without caring to know anything more. Within the last eight years there has been great improvement in this respect in our state. Most wildcatters prefer to prospect intelligently and many are watching not only for oil but for the changes in the formations and their physical nature, knowledge of which may be of consequence in the progress of the work. It has been the policy of the bureau to encourage this attitude. A regional study of well records was made in the Wichita and Clay County fields in 1911, and the bureau has since then given continuous attention to the exact description and stratigraphic determination of well samples from all parts of the state. It has received and examined a number of samples of drill cuttings and has encouraged careful examination of such samples by oil geologists and by drillers generally. Some of the large companies have undertaken work of this kind quite independently during the last few years, and their geologists have shown a commendable spirit of co-operation with the bureau in this work. Several of the younger sub-surface students have received their first brief training in the laboratory of the bureau.

J. A. UDDEN,
Head of Bureau of Economic Geology of Texas

Two papers have been made public encouraging drillers to give close attention to the identification of formations: A so-called "driller's handbook" and a paper containing photographs of microscopic sections from two of the most important formations encountered in the North-Central oil fields. A large amount of "underground" material has accumulated in the bureau, and it is intended that this should be published at the earliest possible moment. The last legislature saw the importance of this work and made a small appropriation to further its pursuit.

The bureau seems to have been of some service to the oil industry in Texas in publishing some reports discussing the general oil possibilities for different regions. This was done in connection with the publication of the first geologic map of the state, and in presenting a summary of the main features of the geology of Texas. Its efforts in this direction have, I think, been appreciated.

The area of Texas is considerably larger than that of any other state in the Union, and with the coming of the general interest in petroleum in the Southwest, it is to be expected that the demands for information on the geology of such an extensive area should far outrun the capacity of a bureau with less than half a dozen geologists to find and supply the details called for by the oil industry. The economic development of the state in all lines has been progressing with enormous strides during the last dozen years, and the financial resources of the government of the state have been strained to meet the necessary demand for information along all lines, as in agriculture, in education, in beneficiary work, in engineering, in the encouragement of conservation of overflowed lands, in the needed superintendence of the interests of stock raisers, and in the collection of information with regard to statistics of all kinds, of economic importance. The bureau has tried to do its share in this great work of general development and progress.

WHAT THEY NEED

The Russian Bolsheviki government is prepared to spend $200,000,000 in the United States, says a news report. For barbers' supplies, no doubt.—Wichita Eagle.

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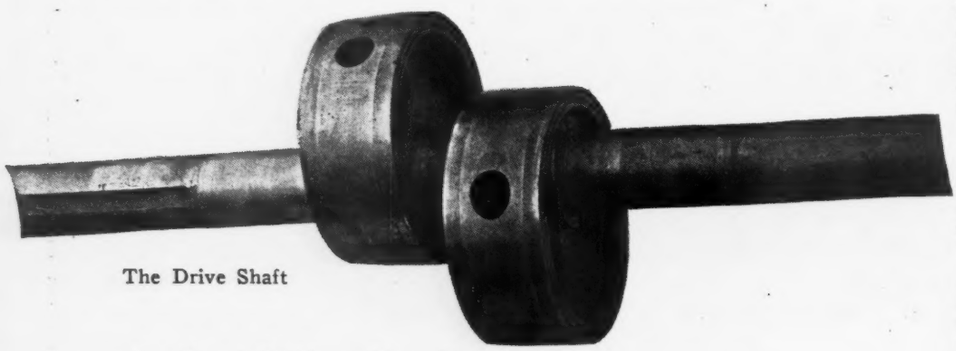
FOR years engineers of world renown have spent days, months and years in an effort to perfect a rotary steam motor which will run. At last this feat has been accomplished, and it was left for a soldier to work out while his brother marines were winning the world war in France.

Frank A. Bannon is the young man who had the idea and who had the patience to work out his scheme to a successful conclusion. When he entered the service of Uncle Sam prepared to go to France, he elected the air service. He was sent to Call Field at Wichita Falls, and there it was soon learned that he was working on a rotary steam motor. His officers learned of his ideas, and when they went into the matter carefully they found what they thought would be a new invention, one that had long been looked for.

The young man was given continuous passes and told to build his machine. He set to work and shortly had completed his model. Army officers, civilian engineers and others were invited to see the test. The test was perfect. The little motor did what its youthful inventor expected it to do. He patriotically offered his motor to the government, and it would have been accepted had not the war ended when it did.



The Drive Shaft

His Services Rewarded

The young man received his discharge from the service, but not until the government had recognized his service by making him a lieutenant. He secured the necessary patents and then the friends who had watched him during his long months of patient work organized a company to place the motor on the market.

One of the most important claims for the motor is that no large fire is needed to furnish the steam as for other large present day engines, hence its usefulness in the oil fields, where the fire hazard is ever present. It is an ideal power for drilling or pumping oil wells, and it is expected that a factory will be erected at Wichita Falls where the motor will be manufactured and furnished to the oil fields nearby.

From Family of Inventors

Lieutenant Bannon is a nephew of Samuel L. Barriett, who at one time owned the controlling interest of the Edison Laboratories and also had charge of the West Point Foundries and has contributed some hundred or more useful inventions to the world, such as the automatic release rheostat for electric motors, and ring oilers for electric motors, as well as perfecting the first electric motor that would run when placed in any position, and also made an invaluable improvement to the long distance telephone and demonstrated it at Houston by calling New Orleans, La., in the last few years of the last century, and many other valuable inventions.

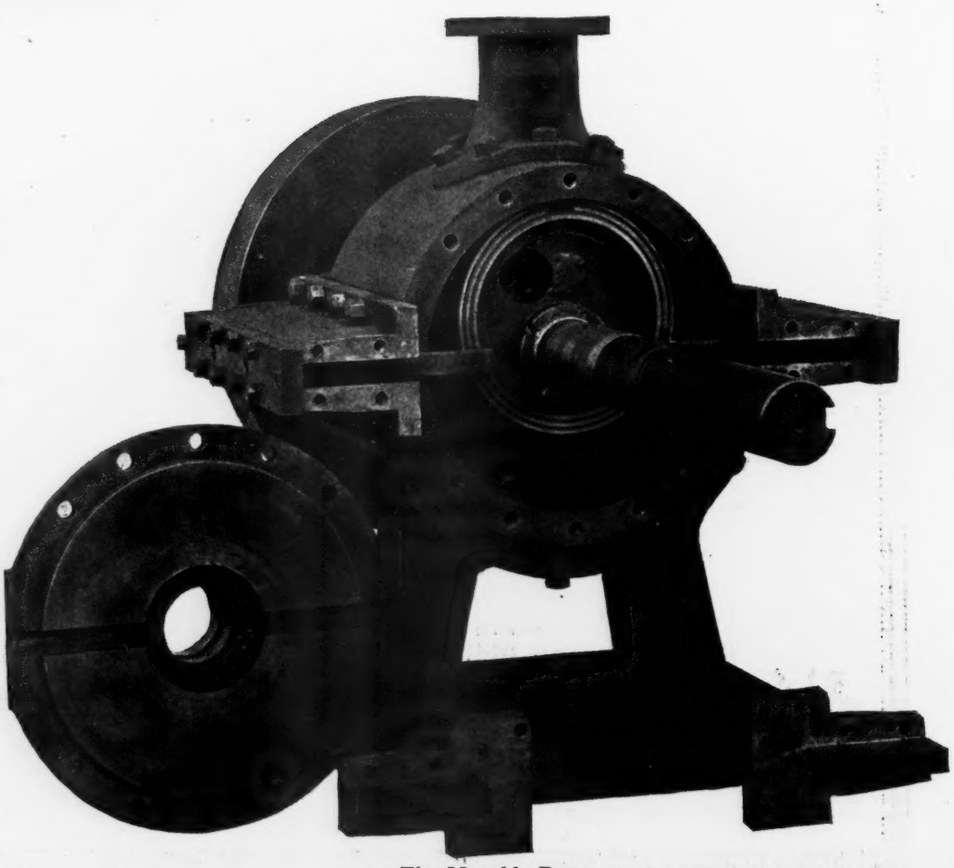
Briefly described, the Bannon rotary steam motor is a very compact steam engine which, when considering horsepower, is about one-fourth the size and weight of an ordinary slide valve steam engine. The Bannon motor is built without a valve and without pistons or piston head, and has only three moving parts when in operation. The drive shaft is entirely balanced and there is no possibility of thrust on any bearings. The Bannon motor rated at 25 to 30 horsepower weighs only 450 pounds, and has developed more than 75 horsepower on the brake test. Its speed is from the very slowest movement up to 3500 revolutions per minute. It is not like a turbine in that it consumes about one-half the steam of the turbine and will start off with any load that it is capable of carrying subsequently, which a turbine will not do. It is not like a slide valve or reciprocating engine in that the impeller, or eccentric, in the Bannon motor runs continually in one and the same direction, thus saving all the steam which is required to bring the piston head in a reciprocating engine to a dead stop twice in each revolution. The motor is protected by twelve basic patents, and there are many improvements thereon made by Mr. Bannon and fully protected by additional papers.

Can Be Made at Small Cost

The engine can be made for less than one-fifth the cost of any other engine of the same horsepower, and its compactness in size and economy in upkeep, together with the saving of from 25 to 40 per cent in steam, will make it the universally used steam engine of the world. This invention is as great as any of the others that have revolutionized the world's business, and is not to be rated of less importance than the telephone, telegraph, cotton gin, steamboat, Ford motor or the typewriter.

The engine has been given every form of rigid test by army and civilian engineers during the last twelve months, and it has proved itself in every instance mechanically sound and correct and an invaluable asset economically.

S. A. Weir, structural engineer, has been interested in the perfection of the patent and has encouraged the inventor through his long experiments. Mr. Weir took the lead in the organization of the company which will manufacture the motor.



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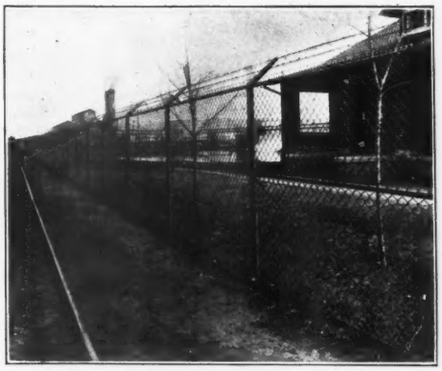

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Geology of the Oil Fields of Bexar County

A PRACTICAL CONSIDERATION

Hunt for Deep Oil Has Best Prospects Off Balcones Escarpment

By E. H. SELLARDS

BEXAR COUNTY is located in South Central Texas, about 125 miles from the Gulf Coast, and approximately an equal distance from the Mexican border. The oil and gas so far obtained is from the southern part of the county, south and southwest of San Antonio. Although somewhat scattered, the producing wells may be grouped into four or five more or less well defined areas, including the Alta Vista, Mission, Somerset, Gas Ridge and Swearingen fields. The Alta Vista field lies about eight miles due south of San Antonio; the Mission field is three miles west of the Alta Vista field; the Swearingen wells are three or four miles south of the Mission field; the Somerset field extends across the Bexar-Atascosa County line about eighteen miles southwest of San Antonio; while the Gas Ridge wells are on the west side of Leon Creek from eight to twelve miles southwest of San Antonio. Between 60 and 70 wells in all are producing in this county at the present time, all of which are small, the average production being from four or five to ten or fifteen barrels per day.

The present paper will be confined to a brief discussion of the character and thickness of the formations including the principal structural features of the county. The data from which this paper has been prepared is taken from a bulletin on the geology of Bexar County which has been prepared and is being published by the Bureau of Economic Geology of the University of Texas, the present paper being published by permission of the director of the bureau. A preliminary paper on the oil fields of this county was read by the writer at the Dallas meeting of the American Association of Petroleum Geologists, March, 1919.

Bexar County lies chiefly within the Gulf coastal plains, although a small part of the northwestern part of the county extends into the highlands of the Edwards plateau. These two provinces, the Coastal plains and the Edwards plateau, are separated in this part of the state by a pronounced southeast facing escarpment produced by faults and dips known as the Balcones escarpment. To the northwest of this escarpment the county is high, and in this county, hilly; to the southeast the land, although in places hilly, is on the average much lower in elevation, including also a larger amount of level land and flood plain deposits. This escarpment enters the county at the west boundary a few miles north of the Culebra road and leaves near the big bend in Cibolo River, in the northeast corner of the county. The oil fields, as already indicated, lie entirely within the coastal plains division, and hence south of the Balcones escarpment.

The formations lying at the surface are those of the cretaceous and tertiary, including in order, beginning with the oldest, the following: Glenrose, Comanche Peak, Edwards, Georgetown, Del Rio, Buda, Eagle Ford, Austin, Taylor, Navarro, Midway and Wilcox. The regional dip is to the southeast. This is also the direction of the average surface slope, but as the dip, except as affected locally by structual surface conditions, is more rapid than the surface slope, it follows that in passing to the southeast, younger formations come successively into the section. Accordingly, the formations are exposed in successive belts across the county, the older formations being found at the north.

With the exception of the Del Rio, the lower cretaceous formations are chiefly limestones, while those of the upper cretaceous, although containing some limestone, include a large amount of clays and marls, and some sands. The teritary formations, the Midway and Wilcox, consist largely of clays and sands.

Thickness of Formations

The lower cretaceous in this county is at least 1800, possibly 2400 feet thick.

E. H. SELLARDS,
Geologist, Bureau of Economic Geology, University of Texas

This measurement is based on a well drilled on the Camp Bullis military reservation, together with a well on the Waring estate, seven miles northwest of the city of San Antonio. The Camp Bullis well, starting low in the Buda formation, passes out of the cretaceous and into schists at 1790 feet. Hence to the 1790 feet drilled through, must be added a part of the Buda removed by erosion, indicating a total thickness of the lower cretaceous at this place somewhat in excess of 1800 feet. To the south the lower cretaceous probably thickens as indicated by the Waring well. This well, which enters the lower cretaceous at 400 feet, apparently terminates in, or at least but little below, the Travis Peak formation at 2853 feet. Hence there is indicated a thickness of the lower cretaceous at this locality in excess of 2000 feet. This interval is divided approximately as follows: Buda, 60 feet; Del Rio, 70 feet; Georgetown-Edwards, including probably Comanche Peak, about 500 feet; Glenrose and Travis Peak combined, from 1200 to 1500 feet or more.

The thickness of the upper cretaceous is difficult to determine within close limits. However, the whole thickness of these formations in this county appears to be close to 1200 or 1250 feet. This measurement is obtained from the well of the Kearney Oil & Pipe Line Company, 12 miles south, and the A. J. Ridder well, 13 miles southwest of San Antonio. The Kearney well starts in the tertiary, but at 125 feet passes through black sands which may represent the Navarro formation. In this well the lower cretaceous is reached at 1337 feet, indicating for the upper cretaceous a possible thickness of 1232 feet. The Ridder well, which starts in pleistocene gravel and loam deposits, passes into glauconitic green sands, which may represent the Navarro formation, at 165 feet. Although not recorded in the log, the top of the lower cretaceous is placed on other data in this well at 1374 feet, indicating for the upper cretaceous a possible thickness of 1209 feet. Inasmuch as the top of the cretaceous is probably an erosion surface, the thickness of these formations may be found to vary within large limits. However, when the whole upper cretaceous is present, the thickness of the series, on the data now available, appears to be in excess of 1200 feet. This interval is distributed as follows: Navarro and Taylor, about 900 feet; Austin, 350; Eagle Ford, 35.

The thickness of the tertiary is equally as difficult to determine as is that of the upper cretaceous. However, on the basis of data which has been contributed and which will be more fully presented subsequently, it appears that the tertiary may attain a thickness in this county of 1350 feet or more.

Structural Geology

The formations of Bexar County, both those of the cretaceous and tertiary, dip toward the Gulf Coast. The rate of dip, however, is changed and the county divided into two very distinct provinces, both structurally and physiographically, along a line coincident with the Balcones escarpment. North of this line the formations, so far as observed, depart but little from the horizontal position, while south of this line on the Coastal plains the structure is much more complicated, the position of the formations being affected both by faulting and folding. Near the Balcones escarpment are large faults, while farther to the south are numerous other faults varying in the amount of displacement. The downthrow in most of the faults, including the largest ones, is to the south; the faults, together with dips, carrying the formations rapidly to a lower level in passing toward the coast. The Del Rio formation, which at the Camp Bullis well, 14 miles north of San Antonio, lies between 1000 and 1050 feet above sea level, is found in the Winters-Kreugel well, ten miles south of San Antonio, at about 1000 feet below sea level, a change of 2000 feet in level in about 24 miles.

Location of Principal Faults

The first large fault of the Balcones fault zone brings the Edwards formation against the Glenrose. Helotes Creek flows in this fault at the Bandera road crossing, and the Edwards limestone at the downthrow side of the fault is exposed in the stream. From

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well records it appears that the throw of this fault, together with probably minor faults and dips, amounts to between 600 and 800 feet. This and other faults, together with monoclinal dips, produces the Balcones escarpment.

South of this first large fault are numerous others, the amount of throw of which varies from a few feet to 400 or 500 feet. These faults are mostly concealed, and it is not always possible to determine whether the displacement of the formation results from faults or from very abrupt dips. One of these faults or monoclinal dips passes north of and approximately parallel to the Castroville road, west of San Antonio. Across this fault line there is a change of level in the formations, as indicated by well records, amounting to about 400 feet within a mile or less. In the western part of the county this fault may be located both by topography and by surface exposures. The line of hills seen north of the Castroville road, in the western part of the county, is formed of the Austin formation north of the fault, while the more or less dissected plain crossed by the Castroville road south of the fault line is chiefly of the Navarro formation.

A large fault with the usual northeast-southwest trend passes through the northwestern part of San Antonio, and may be readily located by topography, surface exposures and well records. An approximate measure of the throw is obtained from two wells located in the northeastern part of San Antonio. On San Antonio River at the north city limits the Comanchean formations lie 554 feet above sea. About one mile farther south these formations are found 124 feet above sea, indicating a change in level of 430 feet. Whether this change in level is due to a single large fault, or to a succession of smaller faults or to combined faulting and dipping has not been determined. The springs of San Anonio and Salado Creeks lie within this zone of fracture.

Near the southern limits of San Antonio is another zone of faults or rapid dips where, as indicated by well records, the formations pass in going south to a level about 400 feet lower in a distance of less than a mile. North of this fault the lower cretaceous formations are entered, at from 250 to 275 feet below sea level, while south of the fault these formations are found to lie at from 600 to 625 feet below sea.

In all of the large faults thus far mentioned, the downthrow is to the south. But that there are faults, usually relatively small, with the downthrow to the north, is inferred from well records, and in at least one instance is observed on surface exposures.

Structurally High Areas

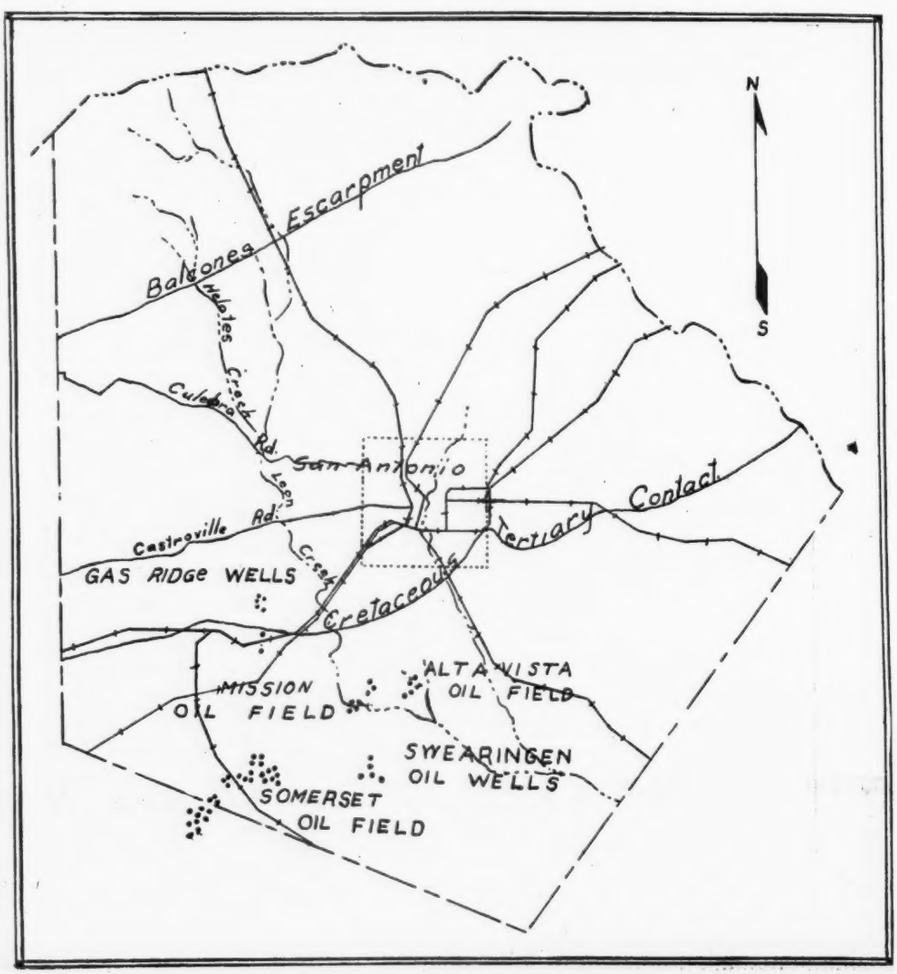
Associated with and more or less limited by the faults and fracture zones described, are structurally high areas, the locations of which are recognized both on surface exposures and on well records. The first of these areas south of the Balcones escarpment is a broad structure, recognized by surface exposures, topography and well records. In the western part of the county the Austin formation lies at the surface on this area, while the Taylor lies at a lower level both to the north and the south. This structurally high area lies about six miles south of the Balcones escarpment, and may be followed from Helotes Creek in a southwest direction to the county line.

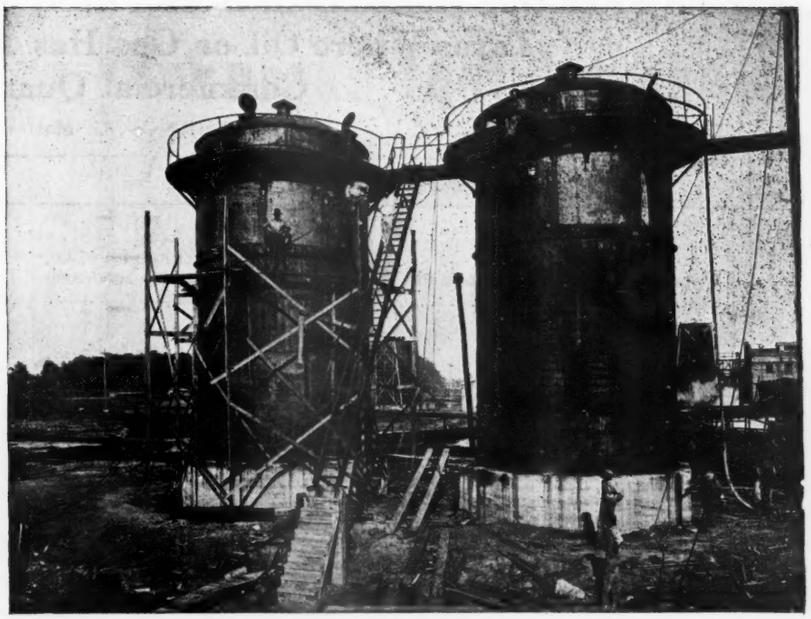
A second structurally high area having a northeast-southwest trend passes through the northwestern part of San Antonio. From San Antonio to the northeast the surface exposures on this structure are those of the Austin formation, although near the western limits of the city owing to the southwest plunge, the Taylor formation is at the surface. From near the west city limits to Leon Creek the surface exposures are concealed by surface flood plain deposits. In the gas and oil field west of Leon Creek, the Navarro formation lies at the surface. Good exposures are found in the right banks of Leon Creek south of Kelly Field, between the Castroville and Quintana road crossings. At the Castroville road crossing and for about two miles farther down Leon Creek, the dips observed are to the northwest, while from near or somewhat west of the Pearsall to the Quintana road crossings, the dips are to the southeast. A green glauconitic sandstone ledge in the Navarro formation, which serves as a horizon marker in these sections, is seen at the Castroville and Quintana road crossings, but is lacking, having been removed by erosion, south of Kelly Field.

Three of the oil fields of this county, namely, the Alta Vista, Mission and Somerset fields, are so located with respect to the prevailing structural lines as to suggest that they are possibly located on the same structure. If this is true, in this structure as in the two already referred to, there is a distinct southwest plunge. The heavy oils of the Alta Vista and Mission fields are from the Austin formation, while the lighter oils of the Somerset field, although the wells are deeper, are from formations above the Austin. Although more difficult to locate, owing to the lack of good exposures, it is to be expected that other similar structures exist south of those to which reference has been made.

General Considerations

The oil fields of Bexar County are located on structures which lie within and are a part of the disturbed area of the Balcones fault zone, the structures approximately paralleling the Balcones escarpment. The location of this county near the turn of this fault zone from a northeast-southwest to an east-west direction accounts possibly for the very heavy faulting as well as for the southwest plunge of the structures. The structurally high areas appear to be limited at either side in part by faults and in part by abrupt dips, the longest slopes being to the southeast. It is probable that the producing wells are located chiefly on the southeast slope of the structures. This is true at least for the Alta Vista, Swearingen and Somerset fields, the data on the Mission and Gas Ridge fields being at present less definite. Production in this county is from the upper cretaceous, the lower cretaceous not having been found to be producing. Wells drilled to test formations below the cretaceous, if located in the central or southern part of the county, must expect to drill through 3500 feet or more of sediments before reaching formations older than the cretaceous. Near the Balcones escarpment the formations next beneath the cretaceous have been found to be schists. Whether or not the Pennsylvanian or other formations come into the section further to the south, between the cretaceous and the schists, has not been determined. If wells are drilled in search of production below the cretaceous, the most promising locations are on structures as far removed, the required drilling depth being considered, as practicable from the Balcones escarpment.





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Authority—W. G. Matteson

System	Series	Formation	Description	Producing Fields	Producing Sands
Cretaceous	Upper Cretaceous	Navarro and Taylor Marls	Blue to black, gumbo like, clays and marls, 1000-2000 feet thickness	Corsicana, Powell, Thrall, Tracy, Somerset or San Antonio	Sand lenses at 1000-1100 ft. Thrall—porous, igneous sill. at 300-900 feet; sand lenses at 900-1500 feet.
		Austin Chalk and Eagle Ford Clay ...	Massive, white, soft chalk, often marly. Gray to blue clays, 400-600 feet thickness	Caddo Field; Marion county extension, including Ferry Lake	Crevices in chalk rock, 1400-1600 feet; lenses in Eagle Ford clays, 2100-2300 feet.
	Permian	Double Mountain ...	Scarlet to gray clays, shales, sands and sandstones. Salt and gypsum, 1800-2000 feet thickness....	Amarillo	Sand at 1800 feet gave gas.
		Wichita	Deep red clays, shales and sands, largely 1000-1500 ft. thickness	Petrolia, Electra, Burkburnett and Iowa Park...	Shallow sands tending to lenses at 400 to 1000 feet.
Carboniferous	Pennsylvanian	Cisco	Red to brown sandstones, gray to red shales and clays, sandy limestones, coal. 800-1000 feet thickness	Petrolia, Burkburnett, Electra, Holliday, southern Archer County, northwestern Brown County, and northwestern McCulloch County (Lohn).....	Sand at 1550-1800 feet gives big production at Electra, Burkburnett and Petrolia; small production at 900-1400 feet, Archer County; small production at 275-325 feet in Brown and McCulloch Counties.
		Strawn	Conglomerates, red sandstones and clays, blue to black shales, gray to blue limestones	Moran pool, Shackelford County; Strawn pool, in S. W. Palo Pinto County; shallow production at Ranger and Caddo; Brownwood, Bangs (in Brown County); also Santa Anna, in Coleman County	Production from middle Strawn at depth 800-1000 feet at Strawn, 1600-2100 at Ranger and Caddo, 1150-1200 at Bangs, 1490-1550 at Santa Anna, 200-300 feet at Brownwood, 1800-1900 feet at Moran.
	Pennsylvanian or Mississippian (?)	Smithwick Shale	Blue to black shales, often carboniferous, with some sand and little gray to black lime	Gray or northeastern Coleman County; Allen pool in eastern Eastland County; Black Bros. well in northern Stephens County; also eastern Palo Pinto County, and Trickham field in southeastern Coleman County	Irregularly scattered lenses at 2400 feet in northeastern Coleman County; 2850-2900 feet in Allen pool, 3240 in northern Stephens County, and 4150 feet in Palo Pinto County; lenses at 1200 feet in Trickham pool.
		Marble Falls Limestone, "Black Lime" or Bend Lime	Gray to black, compact, finely crystalline limestone, blue to black shales.....	Famous Ranger, Breckenridge, Caddo and Desdemona pools of Eastland, Stephens and northern Comanche Counties; also Allen pool in Eastland County, and production from wildcat tests in southern Young and northern Brown Counties.....	The following producing horizons are recognized: (1) Contact of Smithwick shale and Marble Falls lime. (2) Fincher sand, 95 feet below top of Marble Falls lime. (3) Gordon sand, 130-250 feet below top of Marble Falls lime. Main producing horizon of Central Texas fields. (4) Jones sand, 330 feet below top of Marble Falls limestone. (5) Veale sand, 640 to 690 feet below top of Marble Falls lime.

NOTE.—Some important production from the Desdemona or northern Comanche field seems to be coming from an horizon 15 to 60 feet below the top of the Marble Falls limestone. This may be a new horizon to which a definite name might be necessary. This matter is held in abeyance until a number of reliable logs definitely establish the horizon. A small proportion of production at Ranger is coming from the contact of the Smithwick shale and Marble Falls limestone, and considerable production is obtained from this horizon in Stephens County. Production from the Veale sand is obtained from the Veale pool in southern Stephens County and from the northern Brown County field.

W. G. MATTESON

Consulting Petroleum Geologist and Engineer

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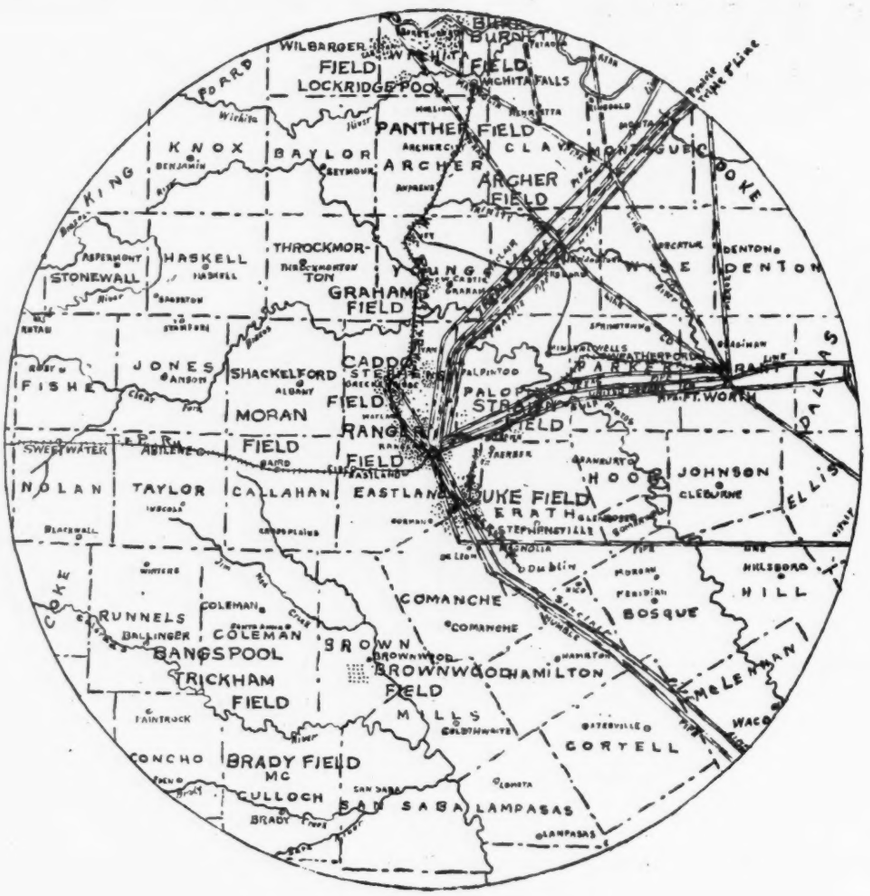

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City Development Section

What Various Texas Cities Advance as Claims as Oil Centers

THE relation of petroleum to a number of cities of the Southwest is so close as to be practically responsible for the life of several of them and for a majority of the population of others. So close is this relation that for the past few years when the name "Tulsa" has been mentioned one has instinctively thought "oil."

Houston and Beaumont have been known as oil towns for years, and now come Dallas, Fort Worth, Wichita Falls, Ranger, Cisco, Mineral Wells and many other Texas towns who present and substantiate claims as oil centers.

In the articles on the pages which follow we have endeavored to show the relation between oil and these cities—to show how petroleum has been responsible for as phenomenal growth in a large number of towns and cities as has ever before been recorded. In short, the purpose of the articles is to indicate the effect of recent development on population, financial standing, etc., as well as to present to the person who may become interested in Texas oil in one form or another, what these cities have to offer the newcomer or the new industry.

Some of these cities are destined to be great oil centers. Others are destined to be field towns, from which sectional work will be directed, and some doubtless are doomed to mushroom growth and then collapse.

Naturally, the conflicting claims of these cities have led to much bickering. In fact, so the story goes, two enthusiastic citizens of different would-be oil centers recently carried their convictions to the fighting point, and later their noses and eyes to a hospital.

The City Where Knocks Became Boosts

How the Fraternity Came, Saw and Sat Up at Wichita Falls

BY W. E. GREEN

IT has been said by some one, under some kind of circumstances, that knocks become boosts; and the man who said this must have been talking about Wichita Falls and the oil fields of Wichita County. The city of Wichita Falls has been knocked from one end of the United States to the other, in Canada, and among the troops during the world war in France. The knocks have traveled to England and other countries.

But it appears that every knock has been a boost. The harder the knocks, the greater the occasion for knocking—the greater the throng to be fed and placed somewhere to sleep. The hundreds and thousands came to Wichita Falls on account of the stories they had heard of the greatest oil field in the world being located in Wichita Falls. But they had also been warned that they would have trouble in getting something to eat and might be forced to sit up all night for the lack of a bed or a cot. But the warning only made these seekers of adventure and wealth more determined than ever to come to Wichita Falls. And to Wichita Falls they came on the first train.

Came, Saw—And Sat Up

They came, they saw, they sat up all night—maybe; and maybe also they made some money. They departed for other parts, and other knockers were abroad. But still they came. The knocks only whetted their appetites. They wanted to see, and they would not be satisfied until they had seen. Some of the old-timers of Wichita Falls have cussed The OIL WEEKLY for telling of the discomforts in Wichita Falls, the profiteers, etc., and these same men have cussed their own local newspapers for doing the same thing. But they saw the thousands continue to come, and they now wonder if a knock is a boost. Some may not yet see it. They are the kind of people who build up other communities—communities where the boosting citizen is appreciated. In Wichita Falls they have no time to appreciate this kind of a citizen. He is very lonesome.

Early in the spring men of the world got ready to come to Wichita Falls. As has been their custom in other travels, they wired some hotel to reserve a room for them. The telegram came, was filed, and the clerk smiled. Why should he do otherwise? He had men leaning over his counter every day who had been begging for a room or a bed for days and maybe weeks. They were on the ground, and had to be cared for first. The fellow not in Wichita Falls would have to look out for himself when he arrived. The cots were all rented out, the rooms were full of beds, and the beds were full of sleeping humanity.

No Time for Screens

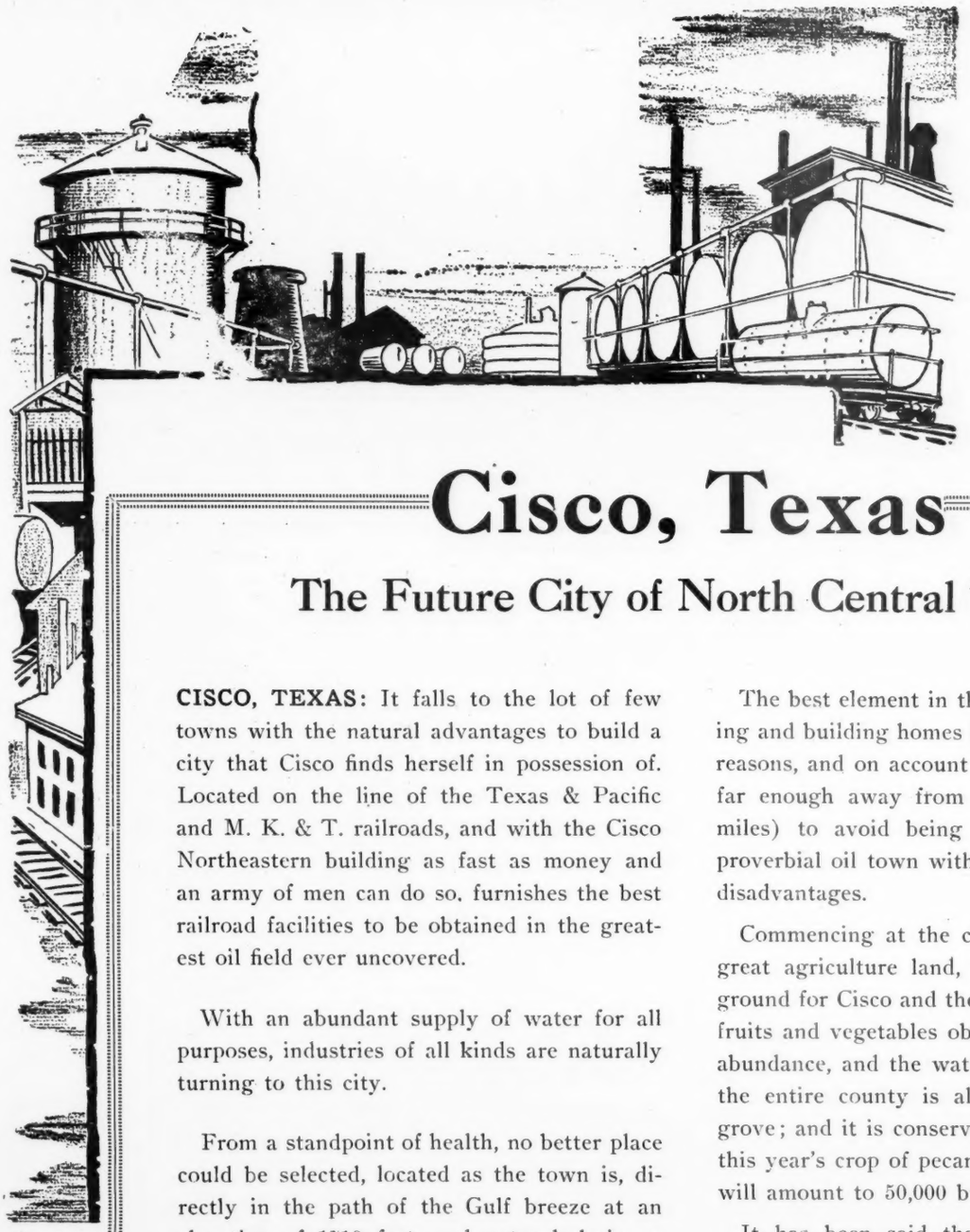
At first the cots in the hallways were screened in, but later that matter of screening was forgotten. No one had any time to provide the screens, and there was no room for screens, anyway. The man who was brave enough or who was so badly henpecked that his wife came with him to the town of all towns, was hard put to find a room where it was permitted that only two persons occupy it in privacy. Then when Mr. Man and his wife repaired to their rooms they were forced to thread their way between rows of sleeping humanity—unless they went to bed very early. And no one noticed or cared. They were experiencing something they would sit around the fireplace some winter in years to come, and tell to their grand-children. Of course they knocked. But every knock was a boost. Every knocker traveling over the country caused others to decide quickly to come to Wichita Falls.

These people far away would listen to the knocker. They would quietly reason to themselves that there must be a very good reason for such conditions existing. They thought out in their calm moments that much money must be had at Wichitat Falls, since they knew that members of the human family would never stand for what they were enduring at Wichita Falls unless they were making money. To make money a man will do most anything. He will eat on the ground and sleep in a chair, if money is to be made in large amounts by so doing. So they came to Wichita Falls in hundreds and by the thousands. They kept on coming. They would go to Burkburnett, look over the oil fields, buy a few leases, buy some oil stock, and get into the game. Conditions were better in Wichita Falls than in Burkburnett, so the hordes came on and joined the other knockers. But they stayed on; they saw hundreds, thousands and maybe millions of dollars in profits dangling before their eyes. Who cared about sleeping, anyway? And any kind of food would do in a pinch.

How Profiteers Were Made

These men who came to Wichita County and made big money are the men who made profiteers of the home owners of the town. They helped to make profiteers of the hotel keepers. It was a case of getting a bed before the other fellow did. The American's way to get what he wants, if he has the money, is to buy it. These same men would learn that some man had a nice room all to himself and that he was paying but $20 a month. Then the owner of that room would be told quietly that they wanted that room and would pay $40 a month for it. This kept up until the bidding of one oil man against another boosted the rent of some rooms up as high as $100 a month. Where is the housewife who would not take the money? She would

"The Street" at Wichita Falls. Literally hundreds of companies were organized, and largely financed, in the city of Wichita Falls during the past year



Cisco, Texas

The Future City of North Central Texas

CISCO, TEXAS: It falls to the lot of few towns with the natural advantages to build a city that Cisco finds herself in possession of. Located on the line of the Texas & Pacific and M. K. & T. railroads, and with the Cisco Northeastern building as fast as money and an army of men can do so, furnishes the best railroad facilities to be obtained in the greatest oil field ever uncovered.

With an abundant supply of water for all purposes, industries of all kinds are naturally turning to this city.

From a standpoint of health, no better place could be selected, located as the town is, directly in the path of the Gulf breeze at an elevation of 1710 feet, and natural drainage second to none.

It is easy to understand why people of this section flock to Cisco to secure the educational advantages offered their children, when the fact is known that the Cisco High School enjoys the greatest number of units of any high school in the State of Texas between Fort Worth and El Paso.

The best element in the oil industry is buying and building homes in Cisco for the above reasons, and on account of the city being just far enough away from the oil fields (seven miles) to avoid being characterized as the proverbial oil town with all its dirt and other disadvantages.

Commencing at the city's door, begins the great agriculture land, which is the feeding ground for Cisco and the oil fields. The finest fruits and vegetables obtainable are grown in abundance, and the water courses throughout the entire county is almost one vast pecan grove; and it is conservatively estimated that this year's crop of pecans in Eastland County will amount to 50,000 bushels.

It has been said that natural advantages are not the necessity in the building of cities, and the facts of this statement are borne out by the city of Chicago having been built in a swamp, and the city of Denver, which was built on the top of the Rocky Mountains. Men, not natural advantages, built these cities, and Cisco is indeed fortunate in having both, with which she is building the queen city of North Central Texas.

Keep Your Eye on CISCO, TEXAS

comfort herself with the thought that it was the roomer who was boosting the price and not herself. She would even tell the would-be roomer that she knew the room was not worth it, but if he wanted it at the price he himself had named he could have it. So things went. The owners of the few rent houses available were popular with those who wanted to rent their houses. The wouldbe renters would bid against each other. The ball kept rolling. Later, Mrs. Smith demanded $100 a month for her room after her roomer had got rich and left town. She knew that Mrs. Jones was getting that much, and her room was just as good as Mrs. Jones', and if you wanted her private opinion, it was better kept and cleaner.

The Restaurants Too

The restaurants had more business than they could attend to. Their landlord increased their rent, and then they raised the price of the dishes. Then the waiters went on a strike and won higher wages. Another boost to the price of food over the counter. Then the cooks demanded and received an increase, and still another boost. It became an endless chain. No one knew when to stop. The man who had been attracted to Wichita Falls by the knocker had started it all. He taught them how it was done, and he went away with a story of the money he made; but he knocked the town with every breath for its profiteering. But who cared about that when there was money to be made? And thus others came. They were convinced by the knocker. They came, they saw, they invested; maybe they made money, and then they left to become a knocker too.

Wall Street in New York City is better acquainted with Wichita Falls and the Burkburnett oil fields than many of the old-time residents of Wichita County. These financiers heard men returning from Wichita Falls discuss deals involving millions without batting an eye. They saw others doing those things they had the only right to do. But the way the knocker from Wichita Falls talked took their breath away, and the first thing you know one of these financiers would clean up his desk, give the word quietly that he had been called South on business—and he would catch the train to Wichita Falls. The knocker had convinced him that there was something afoot that he was not acquainted with. The knocker had become a booster, and he wanted first-hand knowledge.

Getting An Office

Men or firms or corporations with millions invested, and who expected to make more millions, had to content themselves with desk space in the reception room of some office. Others would find a Jew merchant who had a lease on his place of business. This Jew would listen to the talk of big money and out they went. One lot of oil men bought a stock of dry goods, sold out in one day for what the goods would bring at retail, and two days later opened their oil office. The deal cost them more than $1000, but they should worry. They had it on their brother oil men. They had a real office, and who cared about the $1000? They didn't, at least. Billiard halls had to move out. No partitions were erected, but space was railed off and desk space in the large room rented quickly at $30 to $50 a month, according to location. Probably there was one lone telephone in the whole room and they all used it, although most any one of the renters was ready to give a bonus of $50 or more to get a phone installed. But the telephone company could do nothing for them, at least on the short notice they were ready to give.

Such conditions as enumerated above have been in vogue in Wichita Falls for several months. Large office buildings are being erected. Residences and cottages are being built in every part of the city by the hundreds, and the optimist sits back in his chair—if he has one—and tells the seeker of knowledge that by early spring Wichita Falls will be able to care for 60,000 people with ease. The knocker will then disappear. So will the profiteer. There will be no occasion to knock, and the profiteer will be driven away by the conditions and not by law or by public opinion. No man will sleep on a cot when he can get a nice room in a good hotel. Therefore cots will not be offered. The restaurants will give better service, as there will be plenty of restaurants and plenty of waiters. Their food will be cheaper because there will be competition.

Knocker Gone

The knocker will not then be with us. He will have served his purpose and departed for parts unknown. Those who were knockers will be boosters, and the Chamber of Commerce will be able to get some of its members to serve on committees. They will still give their money, but they will take time to help spend that money. These same knockers of 1919, in 1920 will cuss a knocker as they do in other sections lying remote to oil fields like those found in Wichita County.

The knocker in many places and climes is a despised being, but in Wichita Falls in 1919 he has been a booster.

CHERCHEZ L'HOMME

It was a nifty-looking woman who brought her troubles to the Wichita Falls police force for solution. She was all dressed up and everything, but she did not look happy. Oil stock, a sealskin coat and a handbag full of money made in Mexico played parts in her story. Also a man, her husband. He was, perhaps still is, the president of an oil company; she, vice president. She had $3000 worth of stock in other companies. He told her she ought to trade it in for stock in their own company. She did. She also had a sealskin coat. He said he would buy that. He produced a whole raft of Chihuahua money, then showed her an El Paso newspaper quoting Mexican currency as worth 35 cents on the dollar. They traded, and now she owns a handbag full of nicely engraved certificates and money. She came to Wichita Falls and found the coat had been pawned for $200. She wants the police to help her get it back.

One reason why the railroads into Wichita Falls couldn't handle all of the business—there was just too much of it. Long strings of tank cars like those shown in the picture literally block traffic, even now, in the Wichita Falls section.

Republic Oil and Refining Company

GENERAL OFFICES:

Insurance Building, Dallas, Texas

Producers of High Grade Crude

PETROLEUM

Producing Properties In North Texas

5000-Barrel Refinery is now being built three and one-half miles west of Dallas on the Texas & Pacific Railroad and the Texas Co. pipe line. Refinery expected to be in operation January 1, 1920.

North and West Texas Rush Is Making Cities of Hamlets

A DALLAS lawyer went to Ranger on a trades excursion, and began making inquiry into the price of real estate. He was talking to a party who had a lot on a side street he said he'd sell for $9000. The visitor told him he would look around and report to him later in the day. In the afternoon he decided to buy the property, and when he found the owner, the lot had been sold for $15,000.

A Ranger oil man came to Dallas to buy a home, and paid approximately $90,000 for a residence that had been on the market for months at a third less than that amount.

These instances of high finance are not isolated, but may be taken as fair examples of the spasm that has been sweeping over the towns and cities of North and West Texas for the past twelve months.

And these same villages and towns two years ago were as sleepy as Rip Van Winkle, and had about as much activity in them as was necessary to handle the few bales of cotton, the peanuts, and the chickens and eggs raised by the farmers in the surrounding territory each season.

To be explicit, Ranger had 700 people two years ago who made their homes near enough the main and only street that they were counted in by local statisticians. Today Ranger has more than 20,000 people getting mail, or wishing they could get mail, at her postoffice, and camping near enough to get in to town for commissary equipment.

Two years ago a traveler on the Texas & Pacific railroad would not see as many people between Fort Worth and El Paso as he will see now at Ranger any time the train stops there, or at Eastland, or Cisco. Two years ago the farmers of the territory now under development for oil were scratching like h—— to make ends meet, selling a few pigs, a milk pen calf, a bale or two of cotton, and some chickens and eggs when the market was good; and these same farmers now are driving touring cars and wearing diamonds big enough to plug the wells on their property. Villagers who held down soap boxes on the gallery of local grocery stores until the soap boxes were all whittled away, are plutocrats now, and many of them have moved away from the hurly-burly of the oil fields to expensive residences in the larger cities of the state.

In tangible and substantial development, the towns of West Texas have likely added more wealth in the past twelve months than in any other decade in their histories. Not only in the centers of production, but throughout the whole West Texas district, the effect of the production of oil has been shown in remarkable city growth. In some instances new cities have been built where there were forests a year ago—cities in population and wealth if not in metropolitan appearances.

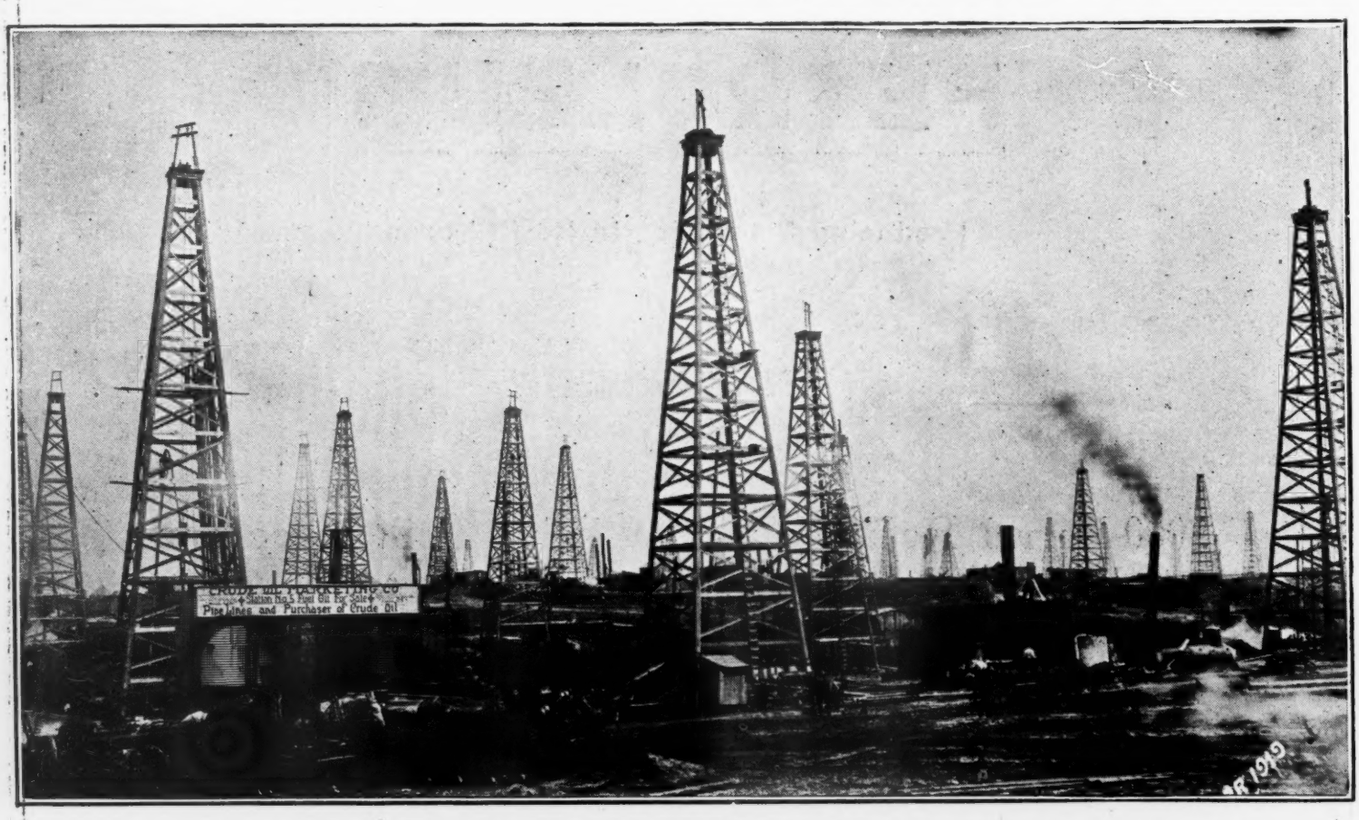
Peculiar advantages possessed by some of the towns in the oil belt have made them develop more rapidly than others, and the attitude of the home population, or native population, of each city is remarkably apparent in the growth and advancement of most of the civic centers.

The intangible but very real element usually known as the "town spirit" or the "city spirit," has had its part in the making of cities in West Texas, even under abnormal conditions. This does not apply to Ranger, as Ranger was built by the incoming oil men, and not added to or developed from what was already there. It is an entirely new Ranger, with nothing of the old sleepy village except the name. But the larger towns that were not so advantageously located have been tried out; all of them are the better off for it, but some are far from what they might have been had a different attitude been assumed by the inhabitants toward the oil men and men in allied industries.

One of the first cities to feel the effect of the development of the fields of West Texas was Mineral Wells. This had been a health resort for years, and having hotels and highways leading in all directions, it naturally became a center from which radiated a large part of the activity of the district.

Mineral Wells has received some substantial development as a result of the oil production in West Texas, although very little oil has been obtained in its immediate territory. It is a good residence town and many of the families made rich by oil have bought or built homes there. This city has a residence population of more than 10,000 and issued building permits to the amount of half a million dollars during the first half of 1919. Its bank deposits have shown an increase of 82 per cent during the past twelve months, and about 100 new homes have been built or were under construction during the first six months of the present year.

In spite of the fact that no railroads have served Stephens County, Breckenridge and Caddo have both developed into important centers for construction work, and field headquarters for producing companies. Caddo has a population now of about 3000, and is only seven months old. It is right in the midst of production, and is an important center for the storage of supplies and for camp headquarters.



WHERE THE OIL FIELD AND THE TOWN ARE ONE—A VIEW OF THE BURKBURNETT TOWNSITE

HOUSTON

The Metroplis of the Southwest

"WHERE EIGHTEEN RAILROADS MEET THE SEA"

Skyline of Houston

HOUSTON—
the Oil Port of the Gulf

AS the demand for petroleum products increases, and as the visible supply in the United States decreases, the petroleum industry necessarily turns its face to newer fields.

Skirting the Gulf and the Carribean Sea, and dotting with islands the surfaces of those bodies of water, are countries many of which are producing oil, and most of which are now in process of development.

Mexico, Colombia, Venezuela, Santo Domingo and Trinidad already are listed as having commercial production. Costa Rica, Panama and practically every other Central American and South American country touching the sea, have prospective oil development under way or have granted concessions to American, English or Dutch companies for development.

Houston is the logical point from which American companies will direct their West Indian and Central American activities. Houston is the logical point to which crude oil will be brought for refining.

Refineries built, planned or building on the Houston Ship Channel have a total capacity of 200,000 barrels a day

SPLENDID SITES AVAILABLE ON THE INDUSTRIAL

For further information write the

HOUSTON CHAM

GARLAND S. BRICKEY, *General*

Turning Basi

ustoBusiness District—

lf and the Southwest

Houston has a land-locked harbor that is recognized as one of the safest on the Gulf. Houston has a deep waterway that was destined by nature to be lined with refineries.

Already some 18 refineries are answering this call of nature.

If you are looking ahead—if you see past the present fields that are supplying today's demand for gasoline and lubricants—you'll appreciate the logical position of Houston as a point from which to direct foreign operations, as a port of export for oil field supplies and refined products, and as an import port for crude petroleum.

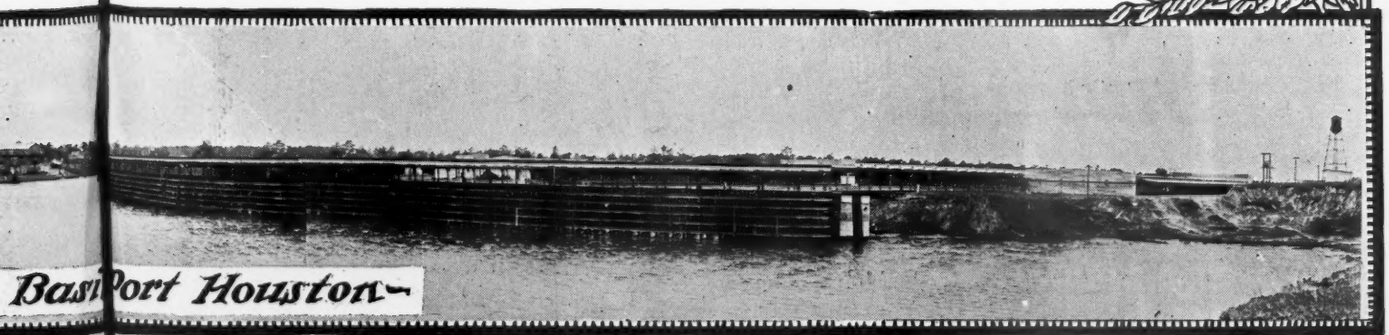
The Mexican Gulf, the Texas Company, the Sinclair-Panama Oil Company, the Sinclair-Mexican Oil Company, the Freeport-Mex Fuel Oil Corporation, the East Coast Oil Company, the Sinclair-Costa Rica Oil Company, and many private individuals operating in Central America and Mexico, are making Houston their headquarters.

SHIP CHANNEL FOR REFINERIES AND ENTERPRISES

Pipe lines entering nearly every oil field in Texas have an outlet on the Houston Ship Channel

BER OF COMMERCE

Manager, HOUSTON, TEXAS



Basi Port Houston—

MINERAL WELLS, TEXAS

"THE PLAY PLACE OF THE SOUTH"

BIRD'S-EYE VIEW OF MINERAL WELLS

MINERAL WELLS HAS—

The best mineral water on earth
A resident population of ten thousand
One hundred and fifty thousand visitors annually
Twelve miles of paved streets
Seventy miles of cement sidewalks
An altitude of a thousand feet
An equitable climate
Four modern bath houses
The largest drinking pavilion in the world
A golf course pleasing to all players
Under construction a city owned lake covering nine hundred and seventy-three acres, with a storage capacity of three and one-half billion gallons of water

MINERAL WELLS IS—

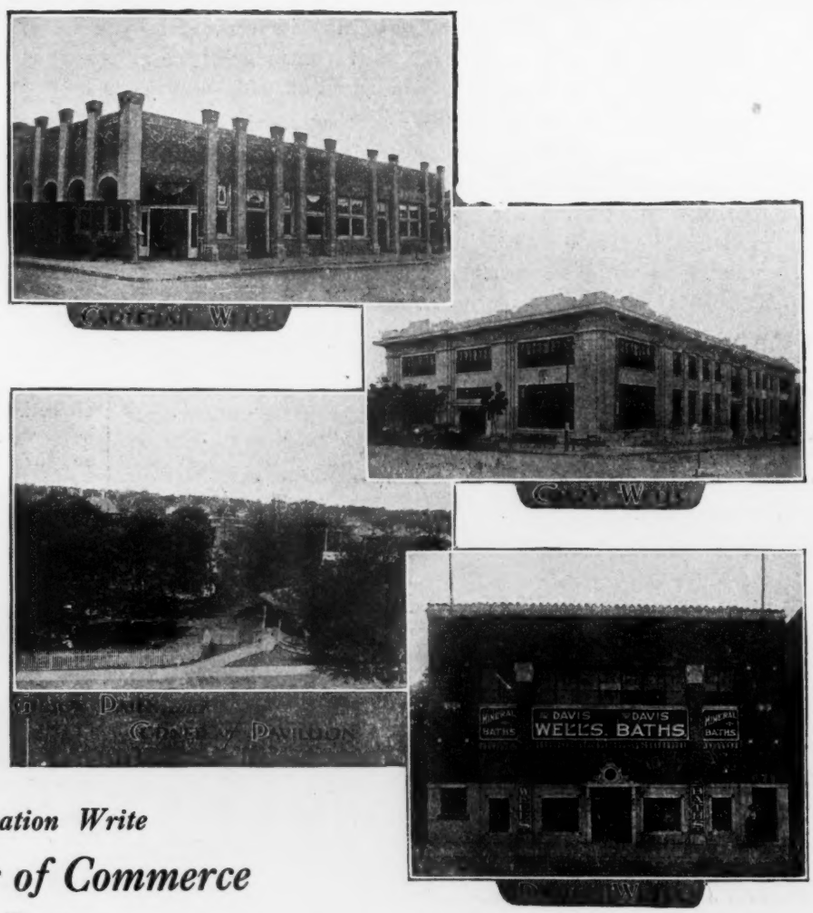
A Winter Resort
A Summer Resort
An All-the-Year-Round Resort
A Good Place to Visit
A Good Place to Play
A Good Place to Rest
A Good Place to Get Well
A Good Place to Stay Well

An Ideal Place to Live

Fine for Conventions

A Place to Meet Business Associates

Mineral Wells has been the headquarters for the large Oil Companies for years. Good roads make it accessible to all North and West Texas oil fields



For Further Information Write

Manager Chamber of Commerce

Mineral Wells, Texas

Breckenridge, the county site of Stephens County, was a village of 600 a year ago, and now has about 4000 people, several strong banks carrying total deposits of more than $3,000,000, and with city aspirations. Breckenridge Stephens Walker, the first male child born in the town and now a millionaire oil man and banker, has donated a site for a reservoir for a water supply for the city. Both Breckenridge and Caddo are calculated to grow very rapidly during the coming year, as the fields of Stephens County are really only beginning to be developed, and the Hammon-Kell railroad is building into the county.

Ranger being the center of the first field developed in West Texas, has naturally taken the lead in growth and is the center of activity for the whole West Texas territory. Practically all the supply companies have yards and warehouses in Ranger, and there are shops and company headquarters here that make it necessary for all operators to do business in Ranger. Building permits in Ranger have run as high as $300,000 a week, and residence sections have been laid out, the business district organized according to a well formed plan, the city incorporated, city mail delivery inaugurated, permanent business buildings erected, streets paved, civic improvements made, and developmental work completed and under way that make Ranger the first city of the West Texas oil region. It is reported that a company is being formed for the purpose of putting in a street railway system, but at this writing nothing has been done in this direction. Ranger is the field headquarters for a large number of the operating companies in West Texas, and its banks have deposits running over $5,000,000.

In the vicinity of Ranger are the loading systems of most of the producing companies, and the tank farms of the pipe line organizations. It is the terminus of several pipe lines running to points out of the state, or to the Gulf Coast country. It also has eight refineries built or under construction, besides a number of casing-head gasoline plants. So long as the West Texas fields are productive, Ranger will be the chief oil city, and its improvements are of such a character that their permanency is well assured.

Just south of Ranger, at what was a year ago nothing but a siding on the T. & P., the town of Olden has sprung into existence. Heavy production of oil in this vicinity has led several of the companies to build loading racks at Olden, and tank farms in the vicinity. Construction crews and oil field workers in large numbers are congregated here, and a city is being laid out. The T. & P. has agreed to build a passenger station, and a banking company is being organized.

The townsite at Ranger, several months back—almost literally "The End of the Rainbow." Since that time Ranger has seen new buildings—real city buildings—and her population has increased several thousand. Two years ago Ranger was a village whose chief amusement was to watch the westbound T. & P. passenger train stop and drop off a few pieces of express.

Eastland has received a lot of the overflow from Ranger, and being the county site, it naturally drew a lot of business that could not well be located elsewhere. During the past few months the extension of the ranger field west has made Eastland a more important center, and a lot of improvement is under way in the city. The postal receipts at Eastland are now greater every month than they formerly were annually. The T. & P. railroad is reported to be moving its division headquarters here, and will build a dam across the Leon River canyon north of the city, making a lake of 260 acres, 30 feet deep. Several local capitalists are financing a railroad line from Mangum through Eastland to the fields of Stephens County, and the land departments of several of the oil companies are located in Eastland, where they can have quick access to the county records. The Gulf Production Company has purchased a site north of the town, on which it is erecting homes for its employes and building warehouses, making this its supply headquarters for the Ranger fields.

A TYPICAL RANGER SCENE—TWO YEARS AGO NOTHING BUT CHAPPARAL AND BURNT GRASS COULD BE SEEN HERE

Cisco has the advantage of being at the junction of two railroads and having a good water supply. It has quick access by railroad to the Ranger field as well as to the districts along the Katy, which comes into Cisco from the south. These advantages have made it the point of concentration for supplies to be used in all parts of the territory, and a favorite residence headquarters for operators in any district of West Texas. The Texas Company and several other producing companies maintain general headquarters in Cisco, and the city's civic advantages have been recognized by the enormous growth in population and financial resources during the past twelve months. The Humble Oil & Refining Company is making Cisco its West Texas headquarters, and preparing to take care of its employes in a group of modern homes in the city. It will also have warehouses here, and will make this point its base of supplies for its drilling activities in all adjoining territory.

Cisco's advantages will likely make it the favorite city of West Texas for those who desire residence accommodations removed from the actual production centers, and where city advantages may be obtained. Good schools, churches, several first-class hotels, paved streets, and plenty of good water are strong points in her favor.

Desdemona is nothing more than a work camp on a large scale, and will be wiped out when the new town of "Jakehamon" is fairly well under way, according to those who have watched the development of the village on Hogg Creek.

Jakehamon starts out with flattering prospects, and is phenomenal in being a city that was built in a day. It was all laid out according to engineers' plans before the location of the site was ever announced. It being on the only railroad that will reach this field, Jakehamon is scheduled to take a prominent place among West Texas oil cities, and its history is all before it.

Gorman and DeLeon have both profited greatly by the development of the Desdemona field. These cities are on the M. K. & T. branch from Waco to Rotan, and the poor roads from points along the T. & P. made it necessary to freight most of the materials for the Desdemona field by trucks

and wagons. Both towns are about the same size, both have ambitions to be cities, and both are traveling cityward. The concentration of supply stores and supplies of oil field materials, together with some refining interests in each, and the field headquarters of operating companies about equally divided in each, have given them a big boost, and they are moving along on the crest of a tide of prosperity. DeLeon held a road bond election during the summer and provided funds for laying a hard surfaced road to Desdemona, calculated to be of vast importance to the city as a distributing point for oil field supplies.

Dublin and Stephensville have also felt the effects of the development of the pool at the corner of Eastland, Comanche and Erath Counties, and have begun on improvements that will be of material and permanent value to their cities. Dublin is especially well located at the junction of the Katy and Frisco railroads, has an abundant water supply, and a good little city from which to build.

Brownwood is important as the center of the Brown County shallow fields, and the home of several small refineries. Deep tests in various parts of Brown County may yet uncover a producing pool from the Gordon sand, and Brownwood again jump into prominence as an oil city.

Since the beginning of the development of the West Texas fields there has been a healthy rivalry between Dallas and Fort Worth for the location of the executive offices of the operating companies, as well as refineries and supply company headquarters.

Both cities have gained materially in wealth and population as a result of the incoming of oil interests, and this growth is reflected in the increase of population, bank clearings, postal receipts, railway business increase, and in the number of new business houses and industrial progress that has been made.

To say that either Dallas or Fort Worth is the recognized center of oil development in North Texas is to put one's self on record as being a partisan of that particular city which he claims is so favored. Both cities are well located for oil centers, each has been made the Texas home of many oil companies, and each is on the crest of a prosperous era that is unprecedented.

A more careful study of the achievements of Dallas and Fort Worth in their efforts at becoming the oil metropolis of North Texas, shows decided points in favor of either city. Fort Worth has a geographical location 35 miles nearer the West Texas oil fields, and this point has been used to good advantage by her business men in making overtures to oil concerns. On the other hand, it is pointed out that Dallas is better located with relation to the fields of the whole Southwest, having an advantage over Fort Worth in being nearer the Louisiana production and the fields of Southeast Texas. Railway connections with Oklahoma, North and West Texas and the Gulf Coast country are especially good from Dallas, and this fact is used in appealing to companies having interests in all these sections.

Refining companies planning to operate on West or North Texas crude naturally have chosen Fort Worth as being nearer these fields. Supply companies carrying stocks for distribution to the various producing centers of North and West Texas have also picked Fort Worth as being closer to the territory in which they operate. Stock companies with interests in these new Texas fields are also more numerous in Fort Worth than in any other city. Branch offices of several of the major producing companies early located in Fort Worth and have maintained their West Texas division headquarters in this city.

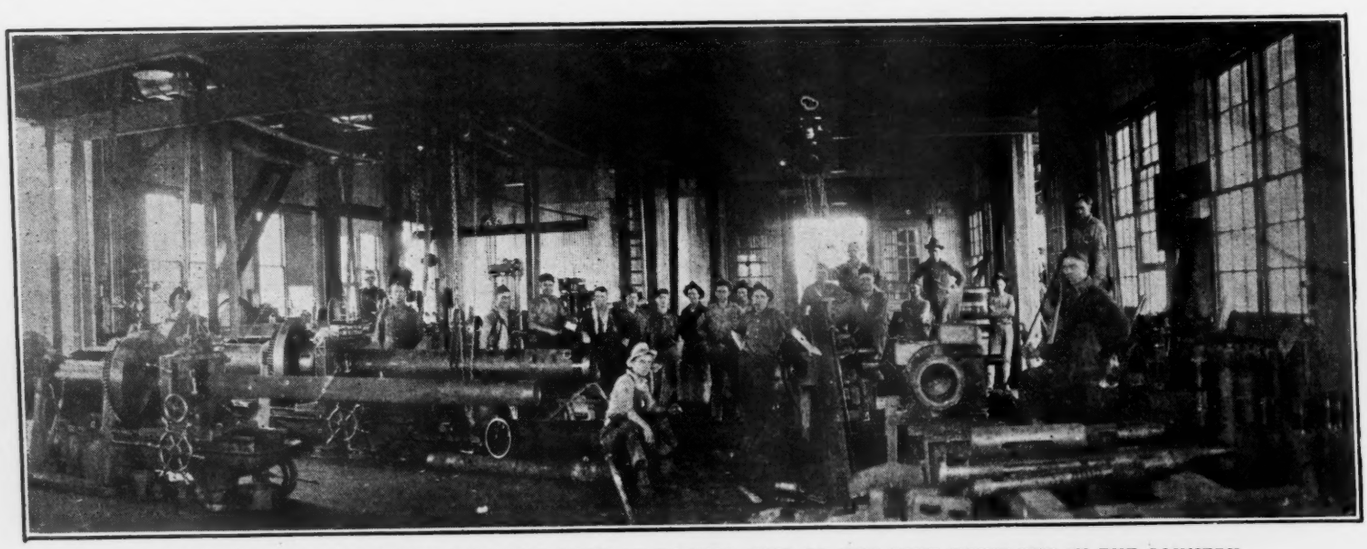
General headquarters for four of the major companies of the country are in Dallas, and branch offices of many more. These companies maintaining homes in Dallas put that city in the lead as the general headquarters for operating companies. The fact that Dallas is the official headquarters for the railroad administration in the state, the home of the Federal Reserve Bank of this district, and has hotel and office accommodations second to no city in the South, are strong points in her favor. These advantages have been recognized by operators whose interests are not local to the fields of North or West Texas, and organizations that are operating in Oklahoma, Texas and Louisiana find Dallas a more advantageously located center.

Both Dallas and Fort Worth have been hard put to it to take care of the increased population due to the incoming of oil and allied companies, and the office space in both cities has long been at a premium. Both cities are now erecting modern office buildings and hotel accommodations that are calculated to relieve the congestion of these points. During the past few months the advantages that Dallas advances in her favor have been effective in appealing to some of the biggest companies in the country, and supply dealers are locating factories and sales headquarters in that city in increasing numbers.

No accurate figures would be changed before they could get cold. Dallas is the general headquarters for the Magnolia Petroleum Company, the Sun Company, the Atlantic Oil Producing Company of Texas, the Benedum and Trees interests in Texas, the New Domain Oil & Gas Company (South Penn of Texas), the Pierce Oil Corporation, Southern District), Oriental Oil Company, the Lone Star Gas Company, and is the divisional headquarters of many other organizations of national reputation. Fort Worth has the divisional headquarters of the Gulf Production Company, the Sinclair Gulf Oil Company, Cosden Oil & Gas Company, Pierce Oil Corporation (Producing Department), Humble Oil & Refining Company, the Empire Gas & Fuel Company, and others.

figures on the number of operating companies in each city could be given, as the

So far, Waco has done little toward getting a profit from the development of oil fields at her door. Waco has direct railroad connections with Comanche and Eastland Counties, being almost as advantageously located with relation to the West Texas fields as is Dallas or Fort Worth.



OILWELL SUPPLY COMPANY MACHINE SHOP AT RANGER, ONE OF THE BEST EQUIP PED IN THE COUNTRY

North Central Texas Oil Field Maps

of Quality, Workmanship and Accuracy

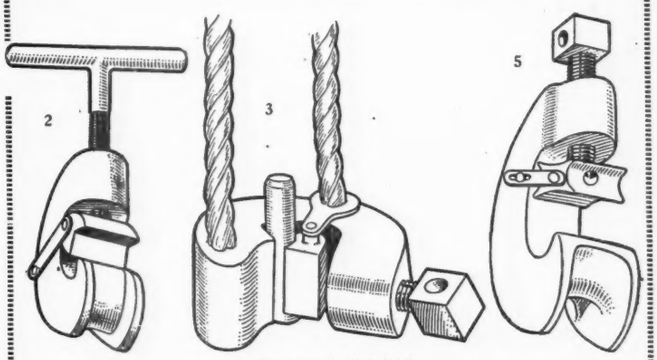
Compiled by mappists of experience who understand and appreciate the requirements of oil operators.

Write for descriptive price list

The Texas Mapping Company

F. A. INNES—H. D. MACKENZIE

411 Main Street, Fort Worth, Texas



Patented, April 4, 1916

Ratigan's Sure Grip
GRIPS and CLAMPS

For use on Polished Rods on Pumping Wells, Tubing, Casing and Bailers

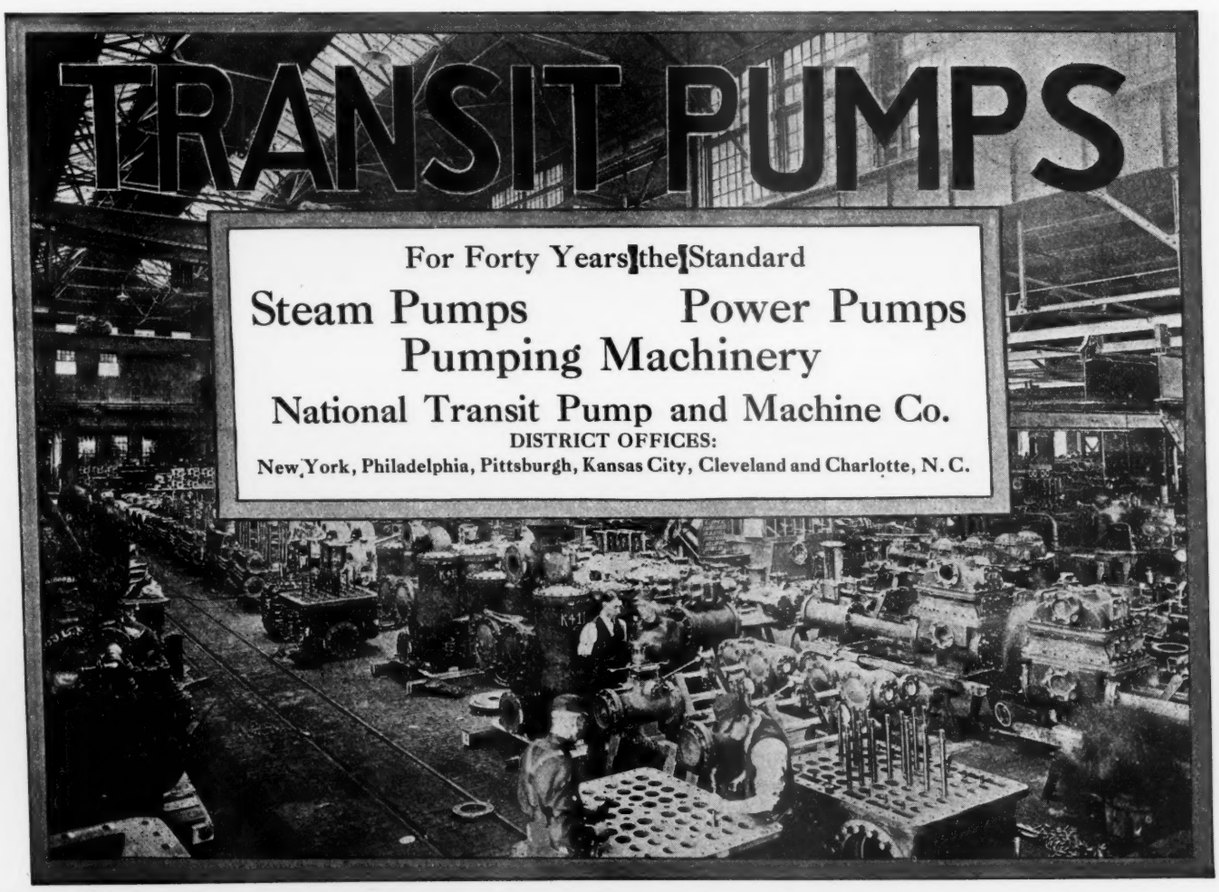
THE ONLY QUICK-ACTING GRIPS AND CLAMPS ON THE MARKET THAT WILL SECURELY HOLD WITHOUT INJURY

Used as regular equipment by many of the largest Oil Producers. Demonstration and free trial to any reliable concern. Sold direct to Oil Producers. Write for descriptive circular

Manufactured by

J. P. RATIGAN

700 North Main Street Los Angeles, Cal.


TRANSIT PUMPS
For Forty Years the Standard
Steam Pumps Power Pumps
Pumping Machinery
National Transit Pump and Machine Co.
DISTRICT OFFICES:
New York, Philadelphia, Pittsburgh, Kansas City, Cleveland and Charlotte, N. C.

Houston, Beaumont and New Orleans Are All Export Ports

The city of Houston and what is known as the Houston district during the past twelve months have enjoyed the greatest prosperity and growth in their history, the oil industry and its kindred interests having much to do with the change. Houston in 1910 boasted a population of around 78,000 and this has increased until this year the city and its suburbs are credited with close to 170,000 persons.

Sixteen banks and trust companies call Houston their homes, four of them having been established during the past year. The clearings for the year 1918 averaged about $66,000,000 a month while the deposits the past year have shown an increase of close to $1,000,000 a month.

Houston's greatest asset is the Ship Channel, which provides a land locked harbor with a water frontage of 50 miles, every foot of that space especially adapted to industries of all kinds where attractive rates are necessary to a profitable business. Houston's port facilities are free to those who will come. The water frontage where the city has constructed fire proof and modern wharves is ample for all purposes and no vessel is charged for the privilege of making use of these public conveniences.

Houston's Ship Channel now has a depth of 25 feet and the money is available for making this depth 30 feet. The width of the channel is to be increased and the sharper bends are to be straightened.

Houston is an oil center, a majority of the larger oil companies of the state having headquarters in this city. There are eighteen refineries either located on the channel or in process of locating here. The Sinclair Gulf Refining Company is just now completing the first unit of one of the most complete plants in the state. The company is building an industrial city for its employes which will alone cost close to $1,000,000.

The Humble Oil & Refining Company is now building a refinery on the channel which is destined to be one of the largest and most complete in the nation. Several are already operating.

The Texas Company has its headquarters in Houston and owns one of the most beautiful and modern office buildings in the state.

The Gulf Production Company and allied companies have headquarters in Houston and make use of practically all of one of the city's largest office buildings. There are many other companies, a majority of them operating in all sections of the state.

In spite of the fact that Houston is surrounded by producing oil fields, her greatest future, as an oil city, undoubtedly lies in the refineries which are beginning to line her Ship Channel, and in the prospective rich fields of Central America and the West Indies.

Already a number of the largest operating companies in Mexico are directing their work from Houston. Among them are the Mexican Gulf, Texas Company of Mexico, East Coast Oil Company, Sinclair-Mexico Oil Corporation, and others. Several companies interested in Central America are finding that Houston is the logical point from which to direct operations. In this matter, Houston has one rival, New Orleans, and New Orleans is not in Houston's class as an oil city.

Companies developing producing in Mexico and Central America and not desiring to place refinery investments near production because of the unstable governmental conditions, have an excellent port in the Houston Channel, and excellent refinery sites along the banks of this channel.

Houston also has considerable note as a distributing base for oilfield supplies. A number of manufacturing concerns giving attention to oilfield supplies have plants at Houston. The Houston plant of the Lucey Manufacturing Corporation already is one of the biggest in the Southwest and plans are under way to increase its size.

Houston is the only city in the United States manufacturing roller rock-cutting bits, and the plant of the Hughes Tool Company, one of the two plants manufacturing such bits, is the largest oil field specialty manufacturing plant in the world.

Beaumont, located on the Neches River with deep water to the Gulf, is a great refining center, big plants of the Gulf Refining Company, the Texas Company and the Magnolia Petroleum Company being located either at Beaumont or at Port Arthur, near by. These three plants are among the largest in the world, and are supplied with crude from all the fields of Texas by pipe lines and by crude from Mexico by tankers and barges.

The Neches River, on which the Magnolia plant is located, offers an excellent deep water outlet to the Gulf from Beaumont, and is rapidly coming into prominence as a Gulf port. She has steamer and sailing ship lines to Mexico and to Porto Rico, as well as to Eastern and European ports.

Beaumont has as a suburb the famous Spindletop field, and at one time her fame as an oil town came from the proximity of this field and of Sour Lake, Saratoga and Batson, all located nearby.

The city of New Orleans, located on the Mississippi, and a leading port of the South, has been feeling the effect of the increased business on account of the growth of the oil business in the Southwest. Late this summer it was estimated that more than 500 people of that city were engaged in some branch of the oil or refining business.

The firms or companies devoting their attention to the oil business number about 25 and there are a number of refineries operating in and tributary to New Orleans, their combined capacity ranging around 75,000 barrels a day, the smaller plants located at the fields not being listed.

The main points of advantage of the port of New Orleans are its proximity to the fields, as well as the Mexican oil fields. From a refining standpoint and from an export standpoint the fact that the city is situated on a deep waterway connected with the Gulf gives free access to various Central and South American countries in addition to Cuba and Mexico, as well as for exporting to Europe and the Orient through the Panama Canal.

Six lines operate vessels to Tampico, a distance of 711 miles; one line operates to Trinidad, a distance of 2362 miles, one line to Port of Mexico, a distance of 750 miles; three lines to Cuba, a distance of 692 miles; one line to Venezuela, a distance of 2100 miles; one line to Colombia, 1692 miles, and five lines to the West Coast of South America, 3200 to 4157 miles.

Oil is not moved up the Mississippi River in competition with the pipe lines.

There is hardly a hamlet in the United States where the name of Galveston, Texas, does not call to the minds of the citizens visions of a great sea wall and great ships loading for their trips to foreign lands. Galveston is but fifty miles from Houston, and regardless of what comes, the shipping goes on and the citizens continue to back their faith in their city by the expenditure of large sums to make it a still greater seaport and a loved playground. Its surf bathing is famed the world over.

Galveston will soon have storage capacity for 1,000,000 barrels of oil. The Katy railroad is equipping its locomotives to burn crude oil, and will draw from the storage to be placed at Galveston. The oil to be used by the Katy will be furnished by the Mexican Petroleum Corporation, which will bring the oil from the Tampico fields to Galveston in tankers. Regular tankers operate between Galveston and the Mexican oil fields.

The Gulf Production Company and the Mexican Petroleum Corporation have leased 17 blocks of land in the east end, where docks will be built, slips excavated and tankage erected, the improvements to cost around $1,000,000. Four other large concerns—the Magnolia Petroleum Com-

Lumbermans
National Bank

Capital and Surplus $1,000,000.00

We Solicit Your Patronage

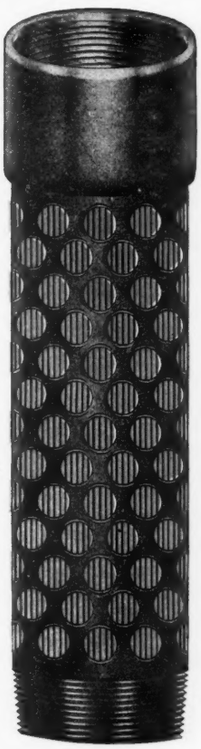
HOUSTON, TEXAS

"McEvoy Wireless" Well Strainer

for Oil, Gas and Water Wells

Section "McEvoy Wireless"
for Emergency Work
FLUSH JOINT STYLE

Showing Completed Joint "McEvoy Wireless" Well Strainer



(Patented)

Section Showing Mechanical Construction
"McEvoy Wireless"

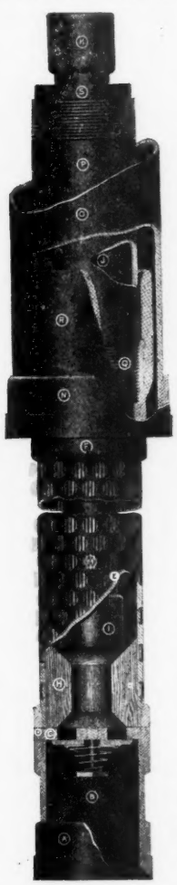
1st—The hole is drilled in the thick wrought pipe.—>

2nd—The hole is then reamed to 5/8 inch for two-thirds of its depth, leaving that——————> heavy shoulder. SEE THAT SHOULDER?

3rd—The "McEvoy Wireless" wrought-brass ——> strainer plug is forced into the reamed hole down to that shoulder by heavy pressure, then riveted firmly in place.

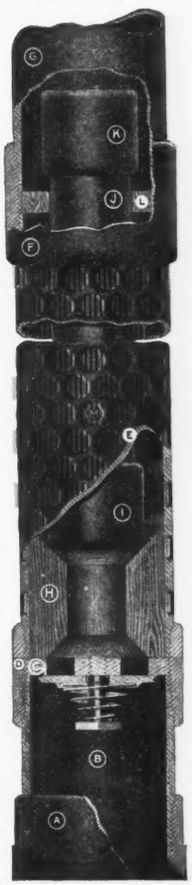
SEE THOSE HEAVY CLINCH MARKS AROUND THE STRAINER PLUGS

"McEvoy Wireless" and Fittings for Double String Wells



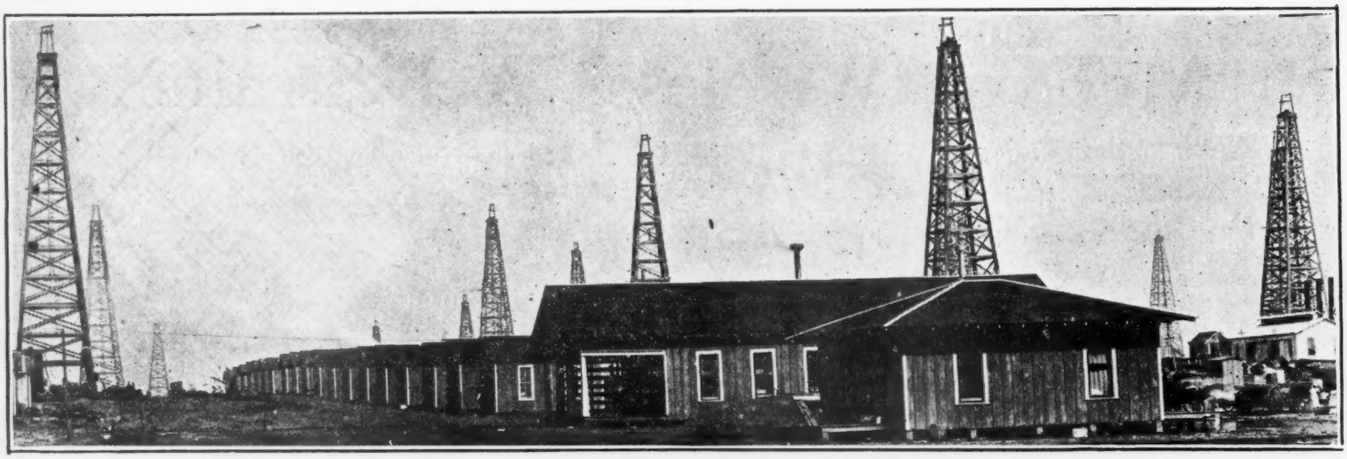
K—Top Coupling on Wash Pipe
S—Steel Wash & Pull Ring
J—Wash Pipe
P—R. & L. Back-Off Nipple
Q—Left Hand Thread
R—Lead Seal on Coupling
O—Outside Casing
N—Casing Shoe
F—R. & L. Lead Seal Coupling
M—Brass Strainer Plugs
E—Strainer Pipe
I—Bottom Wash Pipe Coupling
H—Bottom Wash Plug—Wood
D—Bottom Coupling
C—Back Pressure Valve
B—Bottom Nipple
A—Drive Shoe

"McEvoy Wireless" and Fittings for Single String Wells



Casing Pipe—G
Top Coupling on Wash Pipe—K
Wash Ring—C. I. or Wood—L
Wash Pipe—J
Strainer Coupling—F
Brass Strainer Plugs—M
Strainer Pipe—E
Wash Pipe Coupling—I
Bottom Wash Plug—Wood—H
Bottom Coupling—D
Back Pressure Valve—C
Bottom Nipple—B
Drive Shoe—A

J. H. McEVOY and COMPANY HOUSTON, TEXAS



The Gilliland cantonment at Burkburnett. In order to carry out an intensive drilling campaign it had on, this company found it necessary to build homes for its men. That was the only way to hold them.— Photo, Stevenson.

pany, the Texas Company, the Rio Bravo Oil Company and the Gulf Refining Company—have extensive distributing centers at Galveston.

Galveston is sometimes called the Texas seaport, and much of the business of the Lone Star state intended for export finds its way to Galveston, where ships await their cargoes.

Shreveport, La., is a beautiful city of the South, and has had that name for a long time; but the visitor or stranger does not realize how beautiful and prosperous the city is until he or she has had the opportunity of glancing through the booklet printed last month by the Advertising Club of Shreveport, with the assistance of the Shreveport Chamber of Commerce.

Naturally many eyes have been turned to Shreveport recently on accounut of the big oil field in Claiborne Parish, where 20,000 barrel gushers are not unusual. Shreveport is the nearest large city, and for that reason the influx of oil men from other sections has caused hotel accommodations to become scarce almost overnight.

The prosperous Louisiana city has 75 miles of paved streets and alleys, its churches are worthy of special mention, and its school facilities are second to none to be found in a city its size. The business buildings are modern, its railroads are numerous, and it is famous for its beautiful homes. It is said that the distribution of supplies for oil fields from Shreveport each year exceeds in cash value $5,000,000.

The city is fast becoming a refinery center, and with other pipe lines now under construction added to those already in operation, it is destined to become the terminal for most of the oil gathering systems of North Louisiana oil fields.

The city is located on Red River, and is the second largest city in the state, having a population of 50,000.

WHY, INDEED?

Captain Keelhaul—Why, dod blast my eyes! Wot's the sense o' havin' a ocean if ye're goin' t' fly acrost it?

THE CHIEF RULE

Willis—What is the fundamental principle of the League of Nations?

Gillis—There is to be no fighting except among the members of the league.—Judge.

HUMAN

"The revenue agents are certainly energetic in their search for stills."

"Well, they get thirsty, too."—Judge.

The Security National Bank

DALLAS

Condensed Statement of Condition as Made to Comptroller of Currency on September 12, 1919

ASSETS

Loans and Discounts		$15,706,322.19
United States Bonds and Premiums		1,714,827.78
United States Liberty Bonds		954,750.94
United States Treas. Certificates		10,090,500.00
United States Bonds Borrowed		897,950.00
Other Bonds, Stocks and Securities		1,514,234.93
Stock in Federal Reserve Bank		60,000.00
Furniture and Fixtures and Other Real Estate		532,538.31
Cash in Vault and With Federal Reserve Bank	$ 1,036,836.22	
With Other Banks	5,693,704.18	
With United States Treasury	75,000.00	6,805,540.40
Interest Earned but not Collected		10,051.64
Customers' Liability Account Acceptances		200,000.00
		$38,486,716.19

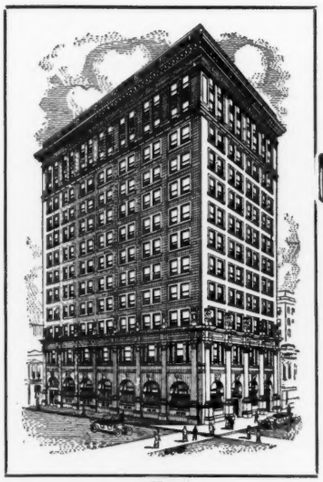
LIABILITIES

Capital Stock		$ 2,000,000.00
Surplus and Undivided Profits		565,804.28
Circulation Outstanding		1,500,000.00
Customers' United States Bonds Deposited		897,950.00
Rediscounts with Federal Reserve Bank		627,700.00
Due Federal Reserve Banks on U. S. Treasury Certificates		3,750,000.00
Deposits:		
Individual	$14,948,229.62	
Banks and Bankers	7,516,321.31	
United States Government	6,480,710.98	28,945,261.91
Acceptances Account Customers' Liability		200,000.00
		$38,486,716.19

The above statement is correct.

D. E. WAGGONER, President

EDWIN HOBBY, Vice Pres. and Cashier



A Banking Connection

A dependable banking connection is sure to prove of growing value to you. With this bank interested in you, and the progress of your business, there is a spirit of co-operation which inspires the highest degree of mutual confidence and loyalty.

The facilities, equipment and conservative management of this bank insure to its customers and correspondents the best of banking service.

QUICK SERVICE

YOUR TEXAS BUSINESS IS INVITED

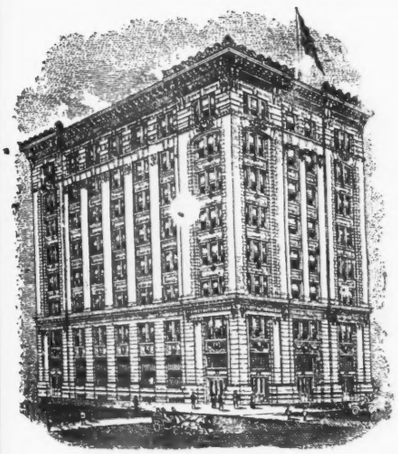
The Union National Bank

CAPITAL $1,000,000.00 HOUSTON, TEXAS

301 Linz Building Dallas, Texas

Sloan, Simpson *and* Company

Owners of well located production and acreage, who desire to sell at a fair price, write us. We have investors willing to buy or put capital in large holdings with efficient management. Nothing too big for us to handle if your property will stand the inspection of experts.



The First National Bank *of* Houston Texas

Capital Stock	$2,000,000.00
Surplus Fund	500,000.00
Undivided Profits . . .	215,000.00
Deposits	18,000,000.00

A Fair and Reasonable Rate of Interest Paid on Time Certificates of Deposit

OFFICERS

J. T. Scott, President F. E. Russell, Cashier
F. M. Law, Vice President G. G. Timmins, Ass't. Cashier
W. S. Cochran, Vice Pres. J. L. Russell, Asst. Cashier
H. B. Bringhurst, Asst. Cashier
J. W. Hazard, Asst. Cashier
O. W. Jackson, Asst. Cashier

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F. A. Root W. S. Cochran F. E. Russell

This gas well has produced enough gas to run the world several days —and still going.

FOR OIL AND GAS WELL SUPPLIES, FROM POWER EQUIPMENT TO A RIVET, FRICK-REID HAS ONLY THE RELIABLE—AND IT'S STOCKED AT THE F-R STORES NEAR YOU

"ROEBLING" WIRE ROPE
"REID" GAS ENGINES
"REID" "ALL METAL" POWERS
"FRANCIS" WORKING BARRELS
NATIONAL TRANSIT PUMPS
FRICK-REID ELECTRIC LIGHT PLANTS
BOSS PULLING MACHINES
RIG IRONS

—and a thousand more.

Frick-Reid Supply Company

TULSA, OKLA. ——— PITTSBURGH, PA.

"Stores near you"

Trade

"IF IT CAN'T BE DONE

FRICK-RE ST
F. R.
FOR READ SER

—that Satisfied feeling! *(Not a Cigarette Advertisement)*

STORES

Texas—
BURKBURNETT
CISCO (Yard)
ELECTRA
GORMAN
WICHITA FALLS
RANGER

Oklahoma
BARTLESVILLE
CHELSEA
CLEVELAND
COVINGTON
CUSHING
DRUMRIGHT
HEALDTON
NELAGONY
NEW WILSON
NOWATA
OKMULGEE
PAWHUSKA
QUAY
SHAMROCK
TULSA
WALTERS

Kansas
AUGUSTA
CHANUTE
ELDORADO
ELGIN
PEABODY

—Remember how good you used to feel, when a boy and you had actually done just the thing your mother wanted, then had her tell you so?

—And remember, too, carrying the basket for the tired, gray-haired woman, and her grateful smile with the sincere "Bless you"?

—And then haven't you dropped a piece of "scarce" money in the cripple's cup and felt better for doing it? Or bought a paper from a hustling, shivering boy, and with a good-natured smile said, "Keep the change"?

—Then don't you feel "different" at the end of the long day to think of your day's duties having been WELL done? There certainly is more in life

and **More to your business when it carries that feeling of having served a good purpose.**

IT'S THE FRICK-REID SCHEDULE OF BUSINESS, IN HANDLING DEPENDABLE, "SERVICE TESTED" OIL AND GAS WELL SUPPLIES, TO KNOW THAT WE HAVE HELPED THE "CAUSE"

Many Stores, Rapid Growth, Friendly Customers, proves our policy

Frick-Reid Supply Company

Executive Offices **Pittsburgh, Pa.** ***Main Offices*** **Tulsa, Okla.**

Mark ***"Just a 'little way' to a Frick-Reid Store"***

F-R STORES F.R.S. READ SERVICE

"WE DO IT"

Dallas

The Logical

Headquarters for the Oil Interests of the Southwest

Midway between the fields of Oklahoma and South Texas, and between those of Louisiana and the Ranger field, Dallas is the natural center of the oil industry of the Southwest.

This Bank makes a specialty of handling the accounts of large oil concerns

Officers

ROYAL A. FERRIS,
Chairman of Board
E. M. REARDON,
President
HENRY C. COKE,
Vice President
E. J. GANNON,
Vice President
JOHN N. SIMPSON,
Vice President
LOUIS LIPSITZ,
Vice President
A. V. LANE,
Vice President
NATHAN ADAMS,
Vice President
H. D. ARDREY,
Vice President
G. H. PITTMAN,
V. Pres. and Cashier
H. H. SMITH,
Assistant Cashier
F. H. BLANKENSHIP,
Assistant Cashier
E. S. McLAUGHLIN,
Assistant Cashier
R. V. SANDERS,
Assistant Cashier
E. J. GANNON, JR.,
Assistant Cashier
B. B. JOHNSTON,
Assistant Cashier
F. C. PONDROM,
Assistant Cashier
PAUL DANNA,
Assistant Cashier
SAM TURNER,
Assistant Cashier
J. J. O'CONNELL,
Auditor

Statement of the Condition of
THE AMERICAN EXCHANGE NATIONAL BANK OF DALLAS, TEXAS
Made to the Comptroller of the Currency at the Close of Business
September 12, 1919

ASSETS

Loans and Discounts		$16,001,453.60
United States Bonds		1,180,000.00
United States Liberty Bonds		1,056,051.00
United States Treasury Certificates		6,654,500.00
Stock in Federal Reserve Bank		75,000.00
Other Stocks and Bonds		17,400.00
Interest Earned, not collected, estimated		40,997.89
Furniture and fixtures		124,700.00
Real Estate and Banking House		1,903,415.18
Cash—		
On Hand and with Federal Reserve Bank	$ 3,598,348.14	
With Other Banks	8,337,825.47	
With United States Treasurer	70,000.00—	12,006,173.61
Total		$39,059,691.28

LIABILITIES

Capital Stock paid in		$ 1,500,000.00
Surplus Fund		1,000,000.00
Undivided Profits, net		1,072,644.31
Reserved for Taxes		181,801.94
Interest Collected, not Earned, estimated		143,911.81
Circulation		1,000,000.00
Deposits:		
Individual	$23,428,818.03	
Banks and Bankers	4,087,339.79	
United States Government	6,645,175.40—	34,161,333.22
Total		$39,059,691.28

THE STATE OF TEXAS
County of Dallas

I, G. H. PITTMAN, Cashier of the above named bank, do solemnly swear that the above statement is true to the best of my knowledge and belief. G. H. PITTMAN, Cashier.

Sworn to and subscribed before me this, the 15th day of September, 1919. J. B. ELLIOTT, Notary Public, Dallas County, Texas.

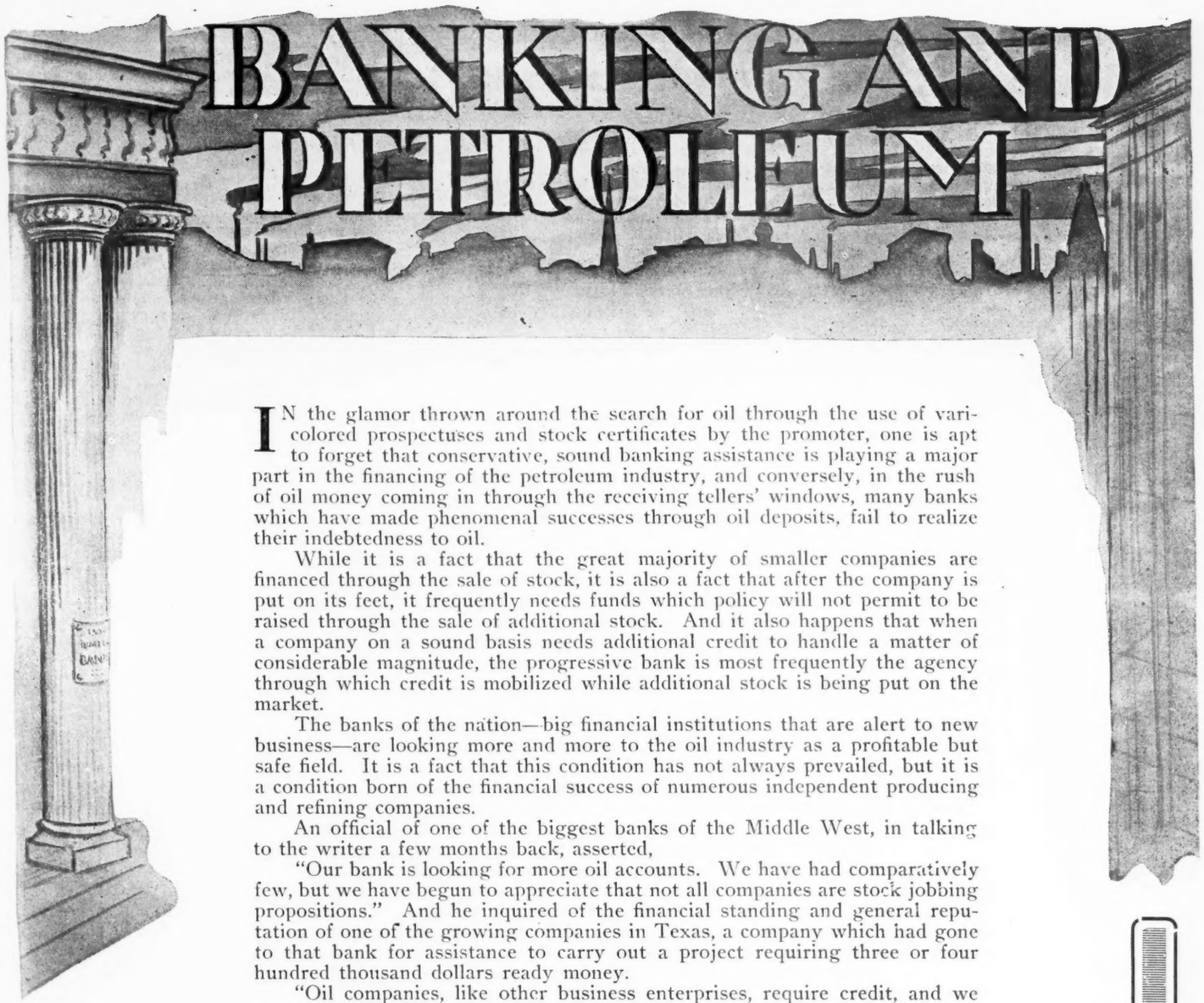
Correct—Attest.

L. BLAYLOCK J. H. McDONOUGH
(SEAL) LAMONTE DANIELS J. D. PADGITT Directors.
EDGAR L. FLIPPEN S. B. PERKINS

The American Exchange National Bank

OF DALLAS

CORRESPONDENCE INVITED



IN the glamor thrown around the search for oil through the use of varicolored prospectuses and stock certificates by the promoter, one is apt to forget that conservative, sound banking assistance is playing a major part in the financing of the petroleum industry, and conversely, in the rush of oil money coming in through the receiving tellers' windows, many banks which have made phenomenal successes through oil deposits, fail to realize their indebtedness to oil.

While it is a fact that the great majority of smaller companies are financed through the sale of stock, it is also a fact that after the company is put on its feet, it frequently needs funds which policy will not permit to be raised through the sale of additional stock. And it also happens that when a company on a sound basis needs additional credit to handle a matter of considerable magnitude, the progressive bank is most frequently the agency through which credit is mobilized while additional stock is being put on the market.

The banks of the nation—big financial institutions that are alert to new business—are looking more and more to the oil industry as a profitable but safe field. It is a fact that this condition has not always prevailed, but it is a condition born of the financial success of numerous independent producing and refining companies.

An official of one of the biggest banks of the Middle West, in talking to the writer a few months back, asserted,

"Our bank is looking for more oil accounts. We have had comparatively few, but we have begun to appreciate that not all companies are stock jobbing propositions." And he inquired of the financial standing and general reputation of one of the growing companies in Texas, a company which had gone to that bank for assistance to carry out a project requiring three or four hundred thousand dollars ready money.

"Oil companies, like other business enterprises, require credit, and we stand ready to advance this credit to companies whom we are convinced are worthy," he continued. "The banks of the East have had practically a monopoly on this, but it shall be our policy henceforth to extend our services particularly to the oil industry."

The mysterious workings of the methods by which "Eastern capital" is interested might form the basis of an article more interesting than the first idea of it would indicate.

In the matter which follows on other pages relating to banking and the petroleum industry in the Southwest, attention is given, however, principally to the result of the development of producing and refining properties on the banks of the Southwest, with some attention being given the policies of various institutions regarding oil collateral.

The figures gathered indicate that Texas banks have had an almost unprecedented year of prosperity, that deposits have increased many fold.

And the banker who, in the face of the statement that Texas banks alone, in the Southwest, during the year had deposits amounting to more than $150,000,000 resulting from the production of oil alone, and that other deposits coming from the petroleum industry will nearly double that amount, can fail to appreciate the relation existing between banking and petroleum must be blind indeed.

North and Central West Texas Banks Studying Oil Business

THE policy of the North Texas banks for the past twelve months has been to study the oil business and at the same time extend every accommodation consistent with commercial banking.

The development of the oil fields of West Texas, and the renewed activities in the fields of North Texas, have made demands upon the larger banking institutions of the territory which had not been foreseen, and demands which could only be met by recognized commercial banking principles. In order to meet the situation more satisfactorily, most of the banks have been making careful studies of the oil industry, have altered the personnel of their directorates to include oil men of recognized standing, have established connections with the small banks in the producing centers of North and West Texas, and have tried to put themselves in a position to handle the oil country business with the same expert service provided for the cotton growers of the South.

In the Southwest

In the South and Southwest, cotton, grain and live stock have been the principal industries of the people since the country was settled. These industries were basic, and all other enterprises, whether of manufacturing, real estate, transportation, jobbing or merchandising, were predicated upon the success of the growers of cotton or grain or cattle. The Southwest was developed upon this basis. Her people took no stock in skyrocket financing, and cared little about the "Oil in Patagonia" or the diamonds in Samarkan. They knew their business, the basis for their wealth, the possibilities of the surface soil and of the cattle that fed on their prairies.

Growing up with fixed industries and little opportunities for innovations, the banks of this region worked out their theories of finance upon scientific and proven principles. They were able to appraise a herd of cows, and make a loan on them within a few per cent of their actual value. They could study the market conditions on cotton and carry the cotton dealers and cotton growers for practically the value of their crops. They knew the law of averages so well that they were even able to advance accommodations to producers of staple crops to within a close margin of the value of such crops even before the crops are made. Experience of long years has made them experts in handling the banking needs of the people engaged in any of the old established industries of the district.

But When Oil Came

But when oil came along, an entirely new field had been opened up. The banks, usually the innovators and pioneers in new industrial enterprises, dropped back a pace and became spectators at the big show, with frowning apprehension and doubt. Oil men rushing in from the four corners of the country made their usual applications for service at the banks, and were met with stern commercial banking practices. A lease in proven territory meant no more to a North Texas bank, in the beginning, than a first lien on a choice segment of the Milky Way. A refinery was a "mine in Mexico" to them.

With remarkable dispatch, however, an entirely new attitude was assumed by the banking interests toward the oil industry and the needs of oil companies and operators in North Texas. In their haste to adjust their operating principles to the new needs, some crude experiences have been tabulated. Oil operators of questionable integrity have in some cases succeeded in getting financial support in Texas—to the calamity of the public in general and to banks in particular. Failure to distinguish between the promoter and the developer has caused many people to place their faith in illegitimate enterprises, and fortunes have been lost thereby.

From this early spirit of credulity, the banks have had a reaction, and at present, during the summer and early fall of 1919, it is about as hard for a faker to get recognition at a bank in North Texas as it is for the devil to be made chairman of a Sunday school convention.

The reaction has gone so far that it is even difficult for the legitimate producer to get accommodations commensurate with his needs. The larger banks have reverted to strictly commercial banking principles, while they make a careful survey of the oil business and can evolve new principles upon which to handle the business of the oil man.

What Is Collateral?

What is collateral in the oil country? Is the honest and reliable business man, inexperienced in oil, to be given support in his oil enterprises? Who is the bona fide operator and who is not? How are loans to be handled on producing property, on wildcat property, on refining enterprises? How much latitude can be given the major company, spending vast amounts in developing new territory? Is real estate in oil boom towns a safe investment? Is the hypothecated value of oil property to be regarded as tangible assets?

These are some of the questions being given close study by bankers in the new oil country. Practically all of them are yet subject to final settlement. And until some satisfactory principles can be worked out that will meet with universal recognition, the old conservative commercial banking principles will be followed.

Oil Directors

In order to meet the new conditions, most of the banks in the oil country have annexed oil operators to their directorates. They have also become close students of financing in older fields. They have set about to evolve a basis for handling the new business, along lines that will be safe and at the same time satisfactory to the operators themselves.

A feature that is being given considerable attention by banks is the organization of trust companies in connection with the banks, to handle the business of oil operators and oil companies. Privileges permitted to trust companies enable them to make larger margins in extending credit, carry paper for a longer period, and perform services that are not permitted by banking laws and practices.

And in the meantime some of the banks are experiencing expansions that could never have been anticipated. In Dallas and Fort Worth during the past twelve months, bank deposits have grown out of all proportion to their growth in previous years. In West Texas towns where production has been obtained, and where labor and supplies have been concentrated, the growth of banks has been nothing short of miraculous. In Ranger, where the total assets of the banks were less than a quarter of a million dollars before the oil strike, the actual call deposits now are five million. Other towns have had similar experiences.

Dallas and Fort Worth banks have established connections with the banks of West and North Texas, and are making consistent efforts to be of service to West and North Texas operators through the smaller banks in the towns of those sections. Every one of the larger banks of these cities is carrying a substantial list of accounts for oil companies and oil men, and their success in this line is measured largely by their efforts to get in touch with the operators in the fields and show a disposition to really be of service in a conservative and consistent way.

Bankers Are Playing the Game

Some months ago one of the leading bankers of Dallas issued a statement to his employes that his institution would frown upon any activity on the part of such employes to participate in the oil stock craze, or engage in questionable promotion enterprises. There is a general tendency toward this attitude by all the more reputable banking houses in the district.

At the same time, however, the banks themselves, or their directors individually, are playing the game to their limit. When affiliations become known, it is found that practically every bank has some new company which it is supporting, or the ownership of which is distributed among its directors and larger clients. Whether or not this will be consistent with their known attitude toward promotion enterprises will be determined, of course, by the success of the enterprise in which they are interested.

Not a "Run on the Bank" Just An Ordinary Day's Work Taking in the Coin

IF a stranger who had no idea of where he was should suddenly find himself about the middle of a week day in one of the banks at Wichita Falls or Burkburnett, he would jump to the conclusion that the bank was about to liquidate, that a run was in progress, and that if something was not done at once the financial institution would be forced to close its doors in a very short time. But what he would see would only be a repetition of the scene in most any of the banks in any city in Wichita County almost any day in any week during the past year.

While the oil men the past year have been spending their millions to secure oil found in almost unlimited quantities in the county at several points, the banks have been having the time of their lives. Cashiers and tellers and executive officers often have not had time to eat. Usually there can be found from two to two dozen men waiting for just a few words with the cashier, the active vice president or the president, or maybe there is a line before the desks of all the officers, in addition to the long lines trying to get to the various win-

ROPE—	BLOCKS—	BELTING—	PACKING
MANILA	TRAVELING	LEATHER	HOSE
BULL	WIRE ROPE	RUBBER	GASKETS
DRILL	MANILA ROPE	BALATA	PUMP VALVES
WIRE	CHAIN HOIST	CANVAS	MILL BOARD

INJECTORS EJECTORS WRENCHES TONGS

VALVES PULLEYS FORGES BLOWERS BARROWS

Water—PUMPS—Steam

Novo
Gas Engines

PIPE :: FITTINGS

Norvell-Wilder Hardware Company

Wholesale
Shelf and Heavy Hardware

Oil Well and Mill Supplies

Beaumont **Fort Worth** **Ranger**
Texas

When you WANT *it we* HAVE *it*

CASING CLAMPS, BULL PLUGS, SWAGE NIPPLES, BELT CLAMPS

dows of the particular institution in which you may happen to be almost any day.

Then and Now

Twelve months ago there were nine banking institutions in Wichita County, located at Wichita Falls, Burkburnett, Electra and Iowa Park. Now there are twelve in the towns mentions and one in the heart of the new Northwest Burkburnett field, a short distance from Burkburnett. On August 31, 1918, when a call was issued by the comptroller for reports, the twelve banks had deposits aggregating $11,725,544 and loans and discounts totaling $10,569,630. This statement was issued about two months after the great oil strike at Burkburnett had been heralded to the world. Oil had been running for a long, long time from the proven field at Electra, and the shallow field at Burkburnett had been producing for years.

The comptroller's call June 30, this year, revealed that there were twelve banks in operation in the county, with aggregate deposits of $34,122,285 and loans and discounts of $23,101,176, thus showing an increase of $22,396,741 in deposits in ten months and $12,531,546 in loans and discounts in the same length of time. The ink was hardly dry on the report compiled as of that date, when further increases were noted, especially in the deposits. It is estimated that the twelve banks at the end of the twelve months period had increased about $26,000,000 in deposits, making the grand total around $38,000,000.

Why the Increase?

Approximately 75 per cent of the increase is due to the oil business.

These figures do not take into consideration the immediate and constant growth of the Thrift-Waggoner Bank, unincorporated, which opened for business in the midst of the Northwest Burkburnett oil field in early July, this year, and which began increasing in deposits around $10,000 each day. The cashier and teller at the oil field bank were so busy the first few weeks at their new jobs that they had no time to patronize a barber. They wore clothes of khaki, as did the oil men in the fields, and they did business as fast as they could in an effort to fill a want that had been known for weeks.

The bankers in the oil field towns claim that the hazards are no greater among the oil men than in any other class of business men. They find that business every day is similar to that enjoyed by the large city banks around the noon hour on Saturdays. They all quickly learn to deal in thousands and millions, and they learn to think and talk fast. They have to, for others are waiting. They have no time to quietly discuss the big financial deal and go into all phases of the matter. Probably a million dollar deal depends on action of a few minutes, and these bankers have learned to act in keeping with the times.

Often large sums of money are held in trust by the banks pending the closing of big deals. The First National Bank of Wichita Falls recently held $2,000,000 in escrow pending the closing of a deal of that magnitude. The same bank at all times has around a half million dollars held in this manner, often more. The City National, the National Bank of Commerce, the First State Bank of Wichita Falls, have had the same experience, and some days probably the amount held in escrow in the various Wichita Falls banks would total several millions. The amount is always large.

The loss account of the banks in Wichita County are not unusually large, considering the amount of business transacted by these institutions. Naturally they have a few bad checks not even worth framing, but the bankers say they find very few pikers among the oil men. These oil men deal in big figures.

To be a good bank official in an oil field county, it is necessary to keep posted. They get wires from all parts of the country asking for information on wells, asking as to standing of oil men operating in thein county, and all kinds of other information having to do with oil. Most of these bank officials know what the new wells are making, the standing of the men behind new oil companies, the extent of the proven field in the various pools, and the man who tries to talk about having splendid indications for a well in some section not already proven has a hard time ahead of him. Then the banker has little time to discuss what may happen in the future. It has been said that yesterday is history in Wichita Falls, and the man who said it must have known what he was talking about. Bankers will bear witness that he was very near the truth.

Practically every bank in Wichita County has increased its capital stock, some of them more than once. New institutions have opened their doors and additional help had to be secured to take care of the constantly increasing business. New buildings

The National Bank of Commerce

FORT WORTH, TEXAS

Capital and Surplus $1,500,000

"The Bank of Service"

THREE of the officers of this bank are old and successful bankers who have been oil producers for years and know the needs of this great industry.

If we can be of service write or call on us.

700

The First State Bank

of Electra, Texas

CAPITAL AND SURPLUS $75,000.00

Report of the condition of the First State Bank, Electra, Texas, at the close of business June 30, 1919. Rendered pursuant to the call of the State banking commissioner

Resources

Loans and Discounts	$ 663,236.32
Building and Fixtures	7,000.00
Liberty Bonds	95,436.41
City Warrants	16,293.89
Depositors' Guaranty Fund	6,723.70
Cash and Due from Banks	361,172.04
Total	$1,149,852.36

Liabilities

Capital Stock	$ 25,000.00
Surplus	50,000.00
Undivided Profits	18,952.23
DEPOSITS	1,055,900.13
Total	$1,149,852.36

The above statement is correct.

C. W. COFFEY, Cashier.

OFFICERS

E. A. DALE, President
S. E. HONAKER, Vice President
P. P. LANGFORD, Director
J. R. BREWER, Director
C. W. COFFEY, Cashier
T. T. WEATHERALL, Ass't. Cashier
M. M. McGANN, Ass't Cashier

Our Hobby

Whether he realizes it or not, nearly everyone has a hobby of some sort and we are no exception to the rule. Our hobby is—

Good Banking Service

To our many friends who are kind enough to favor our bank with their patronage, we owe a debt of gratitude, and we are continually endeavoring to pay off this unexpiring obligation with the most courteous and helpful service of which we are capable. We strive to co-operate with our customers to promote their interests in every way that is consistent with sound banking.

The Peoples State Bank

Capital $150,000

"Where Personal Service Predominates"

908 Congress Avenue, Between Travis and Main Sts.

HOUSTON, TEXAS

R. L. YOUNG, President
CAPT. J. A. HERRING, Vice President
IKE L. FREED, Vice President
LOUIE COHEN, Active Vice President
ELI MARKS Cashier
F. E. HOOD, Assistant Cashier
D. S. CROWLEY, Assistant Cashier

Oil Companies

Who seek banking connections in the Mid-Continent field (Kansas - Oklahoma - Texas) find par-excellent service with the

Exchange National of Tulsa

Built on a practical knowledge of the needs of the oil business, the Exchange has three exceptional points of advantage for large operators and for dealers in oil well supplies:

1—It is Oklahoma's largest bank and handles deals impossible for smaller institutions.

2—It maintains a credit record of oil men and firms that is unexcelled in America.

3—Most real oil producers call the Exchange "their bank."

We solicit correspondence from individuals and firms who deisre more detailed information on the service we afford.

The Exchange National of Tulsa

Oklahoma's Largest Bank Resources Exceed $30,000,000.00

Have all your Iowa Park business transacted through the

FIRST STATE BANK

IOWA PARK, TEXAS

a Guarantee Fund Bank
Our service in handling pay rolls and drilling contracts unsurpassed

L. N. LOCHRIDGE, President
FRED M. JACK, Active Vice President
H. R. DENNY, Cashier

are now being erected to house the City National, National Bank of Commerce, First State Bank and American National Banks of Wichita Falls. All should be in their new quarters by the first of the year.

The following tables will give in detail the business of the various banks in the county, and the growth, with comparisons:

WICHITA FALLS

	June 30, 1919		August 31, 1918	
	Loans & Dis.	Deposits	Loans & Dis.	Deposits
First National Bank	$ 5,888,078	$ 9,151,757	$ 2,900,695	$ 3,371,260
City National Bank	8,113,906	10,363,789	4,005,440	3,885,172
National Bank of Commerce	2,427,309	3,413,221	799,945	763,745
Wichita State Bank	1,738,541	2,487,177	600,000	700,000
*American National Bank	961,200	1,708,944		
Totals	$19,129,034	$27,124,888	$ 8,306,080	$ 8,720,177

*Organized in the spring of 1919.

BURKBURNETT

	June 30, 1919		August 31, 1918	
	Loans & Dis.	Deposits	Loans & Dis.	Deposits
First National Bank	$ 1,366,106	$ 2,262,002	$ 1,800,000	$ 1,321,583
Farmers State Bank	913,388	1,568,053	400,000	500,000
*American State Bank	111,000	444,000		
Totals	$ 2,390,594	$ 4,274,055	$ 1,200,000	$ 1,821,583

*Opened May 1, 1919.

ELECTRA

	June 30, 1919		August 31, 1918	
	Loans & Dis.	Deposits	Loans & Dis.	Deposits
First State Bank	$ 663,326	$ 1,055,900	$ 519,984	$ 598,015
First National Bank	274,296	490,775	230,521	247,409
Totals	$ 937,622	$ 1,546,675	$ 750,505	$ 845,424

IOWA PARK

	June 30, 1919		August 31, 1918	
	Loans & Dis.	Deposits	Loans & Dis.	Deposits
First National Bank	$ 551,253	$ 1,061,214	$ 313,045	$ 338,360
*First State Bank	92,673	115,453		
Totals	$ 643,926	$ 1,176,667	$ 313,045	$ 338,360

*Opened April 14, 1919.

RECAPITULATION—Wichita County

	June 30, 1919		August 31, 1918	
	Loans & Dis.	Deposits	Loans & Dis.	Deposits
Wichita Falls	$19,129,034	$27,124,888	$ 8,306,080	$ 8,720,177
Burkburnett	2,390,594	4,274,055	1,200,000	1,821,583
Electra	937,622	1,546,675	750,505	845,424
Iowa Park	643,926	1,176,667	313,045	338,360
Totals	$23,101,176	$34,122,285	$10,569,630	$11,725,544

Gain in loans and discounts in ten months..... $12,531,546
Gain in deposits in ten months..... $22,396,741

The bank clearings in the city of Wichita Falls averaged close to $16,000,000 a month during the first seven months of the year 1919. During the twelve months of 1917 the grand total reached $31,500,000, and in 1918 no records were kept. Previous to the opening of the American National Bank of Wichita Falls early in the spring of 1919, there were three national and one state bank in operation.

The total clearings for the first seven months of 1919 reached an aggregate of $111,607,185.52, as follows, by months:

January	$ 8,228,465.99
February	12,168,767.48
March	15,187,249.40
April	12,306,349.20
May	25,104,694.02
June	20,108,155.15
July	17,504,004.24
Total	$111,607,185.52

P. J. SCHATZLE, President J. H. MANNING, Sec. & Gen. Mgr.

INTERSTATE SECURITIES CO.

615 Chronicle Building
Oil Securities, Royalties Phone Preston 1373 Leases, Production
HOUSTON, TEXAS

Information as to various oil securities, production and royalties cheerfully furnished

First National Bank

BURKBURNETT, TEXAS

Capital, Surplus and Profits
$175,000

Resources over
$2,500,000

Individual Responsibility of Directors
$15,000,000

Officers

J. G. HARDIN
President

C. C. CABINESS
Active Vice President

J. P. ROODHOUSE
Active Vice President

JOSEPH A. STALEY
Vice President

A. R. PRIBBLE
Cashier

O. H. TINSLEY
Assistant Cashier

R. S. LANGFORD
Assistant Cashier

Production of Texas by Fields

From 1895 to October 1, 1919

Year	Corsicana	Powell	Petrolia	Marion County	Wichita and Wilbarger Counties	Moran	Strawn	Coleman County	Eastland County	Stephens County	Desdemona	Brown County	Thrall	Miscellaneous
1895	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1896	1,450	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1897	65,975	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1898	544,620	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1899	668,483	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1900	829,560	5,479	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1901	763,424	37,121	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1902	571,079	46,812	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1903	401,817	100,143	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1904	374,318	129,329	65,455	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1905	312,595	131,051	101,651	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1906	336,387	675,842	111,072	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1907	276,311	590,897	83,260	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1908	211,117	398,649	82,639	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,525
1909	180,764	383,137	113,485	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,554
1910	137,331	450,188	126,531	251,717	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,656
1911	128,526	373,055	168,965	677,689	899,579	.....	.....	.....	.....	.....	.....	.....	.....	3,379
1912	233,282	251,240	197,421	362,870	4,227,104	.....	.....	.....	.....	.....	.....	.....	.....	4,062
1913	158,830	283,476	344,868	262,392	8,131,624	.....	.....	.....	.....	.....	.....	.....	.....	7,074
1914	133,811	282,279	550,585	180,584	8,227,951	68,191	.....	.....	.....	.....	.....	.....	.....	12,900
1915	143,275	237,410	349,857	123,464	5,833,386	109,116	50,498	.....	.....	.....	.....	.....	613,182	4,061
1916	135,263	215,729	302,145	64,971	7,837,386	135,608	175,147	.....	.....	.....	.....	.....	432,695	32,140
1917	131,828	196,855	282,420	57,952	9,541,636	68,118	340,950	.....	93,053	36,219	.....	6,040	176,887	111,220
1918	*361,980	.....	297,320	.....	12,159,032	54,900	185,520	31,253	3,107,120	790,243	.....	451,002	12,000	e130,000
1919†	26,944	.....	168,670	**	21,274,466	24,500	56,000	36,380	18,083,511	6,727,556	4,336,181	160,351	6,426	e140,000

* Includes Powell; † First 9 months; ** Figures not obtainable; e, Estimated.

Year	Spindle Top	Sour Lake	Batson	Saratoga	Humble	Goose Creek	Orange Co.	Matagorda Co.	Damon Mound	Hull	Barbers Hill	West Columbia	Dayton	Blue Ridge and other pools	San Antonio Dist. and Somerset.
1901	3,593,113	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1902	17,420,949	44,338	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1903	8,600,905	8,848,159	4,518	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1904	3,433,842	6,442,357	10,904,737	739,239	.....	.....	.....	151,936	.....	.....	.....	.....	.....	.....	.....
1905	1,600,379	3,369,012	3,790,629	2,922,215	18,066,428	.....	.....	46,470	.....	.....	.....	.....	60,294	.....	.....
1906	1,075,755	2,156,010	2,388,238	2,289,057	3,570,845	.....	.....	8,000	.....	.....	.....	.....	192,460	.....	.....
1907	1,613,513	2,354,997	2,166,554	2,198,585	2,930,842	.....	.....	4,500	.....	.....	.....	.....	120,036	.....	.....
1908	1,747,537	1,595,060	1,593,570	1,634,786	3,778,521	.....	.....	62,640	.....	.....	.....	.....	39,901	31,185	.....
1909	1,388,170	1,703,798	1,206,214	1,183,559	3,237,060	.....	.....	29,103	.....	.....	.....	.....	17,647	87,039	.....
1910	1,182,436	1,518,723	1,113,767	1,024,348	2,495,511	.....	.....	455,999	.....	.....	.....	.....	9,582	129,497	.....
1911	965,939	1,364,880	1,023,493	925,777	2,426,220	.....	.....	561,828	.....	.....	.....	.....	4,344	2,800	.....
1912	822,916	1,175,108	844,563	1,116,655	1,829,923	43,808	.....	e300,000	.....	.....	.....	.....	12,151	1,044	.....
1913	716,374	1,348,053	741,350	937,720	1,504,880	249,641	17,706	294,553	.....	.....	.....	.....	13,329	1,620	.....
1914	580,130	5,209,208	775,804	889,743	2,799,458	134,748	43,208	164,192	.....	.....	.....	.....	18,791	1,780	.....
1915	388,266	4,114,622	703,686	864,266	11,061,802	119,336	21,697	137,841	.....	.....	.....	.....	10,378	47,254	.....
1916	340,441	4,923,332	744,915	781,128	10,925,805	397,291	17,758	158,336	.....	.....	.....	.....	8,571	43,921	.....
1917	308,039	4,763,004	692,417	682,797	7,389,831	7,300,279	7,023	128,011	.....	.....	.....	.....	9,995	159,245	.....
1918	502,265	3,115,033	654,950	790,740	5,645,104	9,419,132	3,425	99,540	486,640	330,300	20,000	136,350	7,442	40,000	58,400
1919*	353,450	2,129,275	289,400	459,400	2,650,991	5,781,550	3,650e	34,550	327,400	906,360	90,590	5,875,737	e7,500	e20,000	138,450

* First 9 months; e, Estimated.

The above table was compiled from the files of various oil companies, from the files of the Oil Investors Journal, and from a year book issued by the Bureau of Mines, U. S. G. S.

Operations in Texas and Louisiana

Summary for Past Twelve Months

CONDENSED SUMMARY FOR TEXAS BY FIELDS
(Year Ending October 1, 1919)

October, 1918

	Completions	Producers	Failures	Initial production	Production for month
Ranger	13	11	2	15,170	500,000
Breckenridge	6	6	..	2,940	140,000
Burkburnett	57	51	6	15,710	744,000
Electra	14	9	5	375	403,000
Humble	28	18	10	923	403,000
Goose Creek	10	9	1	2,950	857,150
Damon Mound	2	1	1	300	18,600
Saratoga	3	2	1	154	62,000
Batson	4	2	2	100	49,600
Spindletop	..	..	..	....	3,000
Markham	..	..	..	....	4,000
West Columbia	4	2	2	1,150	7,000
Hull	3	1	2	700	77,500
Sour Lake	7	6	1	465	224,800
Wildcats	26	13	13	200	.....
Total	178	131	47	41,137	3,493,650

November, 1918

Ranger	12	8	4	9,320	540,000
Burkburnett	55	46	9	13,240	810,000
Electra	17	10	7	360	405,000
Breckenridge District	9	5	4	2,335	150,000
Humble	21	12	9	3,474	421,910
Goose Creek	9	5	4	3,950	802,100
Damon Mound	3	1	2	100	34,100
Sour Lake	7	4	3	340	263,500
Saratoga	4	1	3	20	62,000
Batson	6	2	4	16	50,000
Hull	2	1	1	1,200	62,000
West Columbia	1	..	1	....	9,300
Markham	..	..	..	....	4,000
Barbers Hill	..	..	..	....	2,325
Somerset Field	2	2	..	30	4,800
Spindletop	4	2	2	....	54,000
Wildcats	18	4	14	90	37,500
Total	170	103	67	34,475	3,663,935

December, 1918

Ranger	15	8	7	33,980	729,820
Burkburnett	69	65	4	17,000	1,500,000
Electra	9	6	3	270	396,800
Breckenridge	7	5	2	3,145	250,000
Humble	13	6	7	4,190	477,510
Goose Creek	17	7	10	3,200	775,000
Damon Mound	2	1	1	1,000	40,300
Sour Lake	6	3	3	53	260,400
Saratoga	4	1	3	30	61,000
Batson	3	..	3	....	48,000
Hull	3	1	2	2,000	65,000
West Columbia	3	2	1	10,030	65,000
Markham	1	..	1	....	4,000
Spindletop	1	1	..	30	53,000
Somerset	7	7	..	100	5,000
Wildcats	19	8	11	1,624	.....
Total	181	123	58	67,652	4,730,830

January, 1919

Ranger	31	28	3	31,115	1,240,000
Breckenridge	18	15	3	5,175	164,300
Burkburnett	73	69	4	17,033	1,230,700
Iowa Park	1	1	..	20	3,100
Electra	18	11	7	351	393,700
Petrolia	3	3	..	30	20,150
Holliday	..	..	..	....	5,115
Humble	10	4	6	485	354,000
Goose Creek	9	6	3	2,195	767,250
Damon Mound	1	..	1	....	46,500
West Columbia	2	2	..	11,500	174,026
Saratoga	7	4	3	59	60,000
Sour Lake	4	3	1	123	255,000
Batson	3	2	1	17	48,000
Hull	2	2	..	5,000	90,000
Spindletop	2	2	..	....	54,000
Barbers Hill	2	2	..	500	4,650
Somerset	2	2	..	41	5,000
Markham	1	1	..	gas	4,000
Wildcats	18	9	9	3,170	3,170
Total	207	166	41	76,814	3,691,961

February, 1919

Ranger	19	14	5	37,715	1,260,000
Breckenridge	13	6	7	9,880	280,000
Burkburnett	93	87	6	28,380	1,612,000
Electra	25	13	12	300	364,300
Iowa Park	3	1	2	15	2,800
Petrolia	9	7	2	300	19,224
Holliday	1	1	..	20	5,040
Humble	21	14	7	899	308,000
Goose Creek	11	7	4	1,900	672,000
Damon Mound	..	..	..	....	36,400
Sour Lake	8	7	1	318	224,000
Saratoga	4	4	..	154	50,600
Hull	2	2	..	2,400	50,500
West Columbia	2	1	1	6,000	295,000
Barbers Hill	2	1	1	125	5,500
Batson	..	..	..	....	44,800
Markham	..	..	..	....	14,000
Spindletop	6	6	..	255	35,000
Somerset	3	3	..	65	5,600
Wildcats	27	14	13	2,060	2,700
Total	259	198	61	90,761	5,287,464

March, 1919

Ranger	37	29	8	19,325	2,013,170
Breckenridge	14	13	1	11,910	615,195
Comanche County	8	8	..	70	158,100
Coleman County	..	..	..	....	4,340
Brown County	..	..	..	....	22,321
Burkburnett	186	169	17	37,529	1,575,000
Electra	25	7	18	800	376,200
Iowa Park	18	15	3	490	5,500
Petrolia	3	3	..	10	20,150
Holliday	2	..	2	....	6,975
Humble	7	7	..	128	304,296
Goose Creek	15	9	6	8,775	682,000
Damon Mound	2	1	1	150	38,750
Saratoga	3	2	1	340	54,250
Hull	2	1	1	....	108,500
West Columbia	7	6	1	18,000	543,58-
Barbers Hill	..	..	..	....	100
Batson	..	..	..	....	40,300
Markham	2	2	..	146	1,000
Spindletop	2	1	1	12	38,750
Sour Lake	3	2	1	330	252,000
Somerset	1	1	..	5	6,200
Wildcats	25	9	16	200	6,200
Total	373	297	76	99,540	7,864,759

April, 1919

Breckenridge	25	18	7	6,600	511,110
Ranger	34	27	7	26,160	1,961,760
Comanche	15	14	1	5,280	198,990
Burkburnett	117	103	14	40,235	1,494,500
Electra	14	9	5	300	367,500
Iowa Park	17	6	11	95	6,750
Petrolia	1	1	..	gas	19,500
Holliday	..	..	..	....	6,000
Humble	12	6	6	175	227,000
Goose Creek	11	5	6	375	534,000
Damon Mound	1	1	..	20	36,000
Saratoga	4	3	1	70	54,000
Hull	6	2	4	5,500	105,000
West Columbia	8	4	4	10,125	859,050
Barbers Hill	1	1	..	150	.....
Batson	2	2	..	35	42,000
Markham	2	2	..	175	5,250

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Manufacturers

Fort Worth, Texas

	Completions	Producers	Failures	Initial production	Production for month
Spindletop	3	2	1	45	36,000
Somerset	3	3	..	48	7,500
Sour Lake	3	2	1	330	252,000
Wildcats	26	6	20	1,930	40,050
Total	305	217	88	97,648	6,763,960

May, 1919

Ranger	52	48	4	30,415	2,149,416
Comanche County	31	14	17	3,735	286,037
Breckenridge	14	13	1	16,125	684,883
Strawn	..	..	..	....	7,440
Coleman	..	..	..	....	4,640
Brown	..	..	..	....	20,150
Moran	..	..	..	....	3,720
Burkburnett	178	140	38	49,380	1,944,000
Electra	24	16	8	720	379,750
Iowa Park	35	19	16	415	12,500
Petrolia	..	..	..	....	20,150
Holliday	..	..	..	....	4,650
Humble	14	10	4	241	288,300
Goose Creek	8	4	4	2,125	539,400
Damon Mound	1	1	..	20	34,100
Saratoga	3	2	1	80	50,000
Hull	6	4	2	5,900	107,415
West Columbia	10	7	3	10,200	605,492
Barbers Hill	2	1	1	70	1,000
Batson	..	..	..	....	37,200
Dayton	2	1	1	400	600
Markham	2	2	..	20	6,200
Spindletop	2	2	..	410	37,200
Somerset	3	3	..	60	72,400
Sour Lake	11	6	5	450	260,400
Wildcats	38	21	17	205	1,860
Total	451	324	127	120,971	7,299,433

June, 1919

Stephens County	20	19	1	14,910	807,000
Eastland County	50	40	10	58,745	2,145,540
Comanche County and Desdemona Pool	26	23	3	12,845	362,850
Coleman County	..	..	..	....	2,850
Brown County	..	..	..	....	22,200
Burkburnett	147	113	34	76,130	2,168,500
Electra	21	11	10	355	360,000
Iowa Park	20	11	9	270	13,500
Petrolia	4	..	4	....	18,000
Holliday	..	..	..	....	6,000
Humble	12	8	4	2,110	285,000
Goose Creek	2	1	1	2,000	510,000
Damon Mound	2	1	1	10	31,500
Saratoga	2	1	1	400	48,000
Hull	9	8	1	8,650	76,800
West Columbia	20	6	14	13,450	691,500
Barbers Hill	4	2	2	600	6,000
Batson	..	..	..	....	36,000
Dayton	..	..	..	....	.....
Markham	1	1	..	20	3,400
Spindletop	2	2	..	65	36,000
Sour Lake	6	3	3	130	225,850
Somerset	5	4	1	42	13,250
Wildcats	27	11	16	135	1,800
Total	384	265	119	90,867	7,872,540

July, 1919

Ranger	46	38	8	35,500	2,275,500
Stephens County	31	28	3	13,000	1,107,750
Desdemona section	63	54	9	40,000	895,000
Brown County	..	..	..	....	22,000
Coleman County	..	..	..	....	2,800
Burkburnett	155	111	44	89,935	2,654,000
Electra	23	12	11	565	356,500
Iowa Park	20	9	11	220	18,600
Petrolia	1	..	1	....	18,600
Holliday	..	..	..	....	6,200
Humble	8	4	4	275	274,195
Goose Creek	9	5	4	6,225	697,500
Damon Mound	2	..	2	....	32,550
Saratoga	..	..	..	....	48,550
Hull	3	3	..	5,300	134,075
West Columbia	13	8	5	15,800	790,221
Barbers Hill	3	2	1	800	21,700
Batson	..	..	..	....	35,000
Dayton	..	..	..	....	.....
Markham	..	..	..	....	3,100
Spindletop	..	..	..	....	36,200
Sour Lake	3	3	..	165	219,938
San Antonio district	7	4	3	48	29,450
Wildcats	45	12	33	45	1,860
Total	429	290	139	207,878	9,681,289

August, 1919

Eastland County	67	58	9	46,925	1,894,131
Stephens County	27	25	2	21,570	1,288,318
Desdemona	79	77	2	54,595	1,148,204
Moran	..	..	..	80	2,480
Strawn	..	..	..	150	4,650
Coleman County	..	..	..	150	4,650
Brown County	..	..	..	450	14,980
Burkburnett	228	176	52	218,550	2,849,000
Electra	15	7	8	545	347,000
Iowa Park	20	14	6	790	22,000
Petrolia	1	..	1	....	16,750
Holliday	..	..	..	....	4,550
Humble	9	5	4	140	266,600
Goose Creek	13	8	5	2,465	822,300
Damon Mound	6	2	4	350	34,100
Saratoga	6	3	3	65	48,000
Hull	7	4	3	3,200	145,390
West Columbia	14	7	7	12,500	848,203
Barbers Hill	2	1	1	300	29,140
Batson	..	..	..	....	3,100
Dayton	..	..	..	....	200
Markham	1	1	..	gas	3,100
Spindletop	2	2	..	175	40,300
Sour Lake	3	3	..	112	212,860
San Antonio district	6	6	..	88	9,400
Wildcats	36	12	24	52	3,865
Total	542	411	131	363,162	10,063,271

September, 1919

Desdemona	62	55	7	35,515	1,287,000
Ranger	63	57	6	45,095	1,835,100
Stephens	31	28	3	6,175	1,269,000
Wildcats	16	..	16	63	.....
Strawn	..	..	..	....	5,400
Coleman	..	..	..	....	5,100
Moran	..	..	..	....	2,700
Brown	..	..	..	....	13,500
Burkburnett	199	179	20	168,993	2,336,182
Electra	15	6	9	335	310,904
Iowa Park	17	8	9	205	20,850
Petrolia	1	1	..	gas	16,200
Holliday	..	..	..	....	4,600
Humble	8	3	5	47	243,600
Goose Creek	10	6	4	530	557,100
Damon Mound	..	..	..	....	37,500
Saratoga	5	1	4	5	46,000
Hull	7	3	4	425	88,680
West Columbia	9	6	3	8,150	1,068,660
Barber's Hill	1	1	..	75	22,500
Batson	..	..	..	....	3,000
Dayton	..	..	..	....	200
Blue Ridge	1	1	..	....	3,100
Markham	1	1	..	....	4,500
Spindletop	..	..	..	....	40,000
Sour Lake	1	1	..	50	235,350
San Antonio District	3	3	..	35	.....
Wildcats	14	2	12	....	13,380
Total	464	367	97	265,713	9,470,106

CONDENSED SUMMARY FOR TEXAS BY MONTHS

(Year Ending October 1, 1919)

October, 1919	178	131	47	41,137	3,493,650
November, 1918	170	103	67	34,475	3,663,935
December, 1918	181	123	58	67,652	4,730,830
January, 1919	270	166	41	76,814	3,691,961
February, 1919	259	198	61	90,761	5,287,464
March, 1919	373	297	76	99,540	7,864,759
April, 1919	305	214	91	97,648	6,002,360
May, 1919	451	324	127	120,971	7,299,433
June, 1919	384	265	119	90,867	7,872,540
July, 1919	429	290	139	207,878	9,681,289
August, 1919	542	411	131	363,162	10,063,271
September, 1919	464	367	97	265,713	9,470,106
Total	3944	2889	1055	1,556,708	79,843,198

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CONDENSED SUMMARY FOR SOUTHERN LOUISIANA
(Year Ending October 1, 1919)

October, 1918

	Completions	Producers	Failures	Initial production	Production for month
Edgerly	2	2	..	3,100	93,000
Evangeline	3	1	2	20	36,200
Vinton	3	3	..	7,150	108,500
Total	8	6	2	10,270	237,700

November, 1918

Vinton	2	1	1	500	132,000
Edgerly	1	1	..	500	39,000
Evangeline	1	..	1	....	38,500
Total	4	2	2	1,000	209,500

December, 1918

Vinton	5	4	1	2,775	170,000
Edgerly	2	2	..	50	38,000
Evangeline	1	1	..	30	38,000
Total	8	7	1	2,855	246,000

January, 1919

Vinton	9	4	5	270	133,000
Edgerly	3	1	2	25	38,000
Evangeline	..	..	..	....	38,000
Welsh	1	1	..	75	38,000
Total	13	6	7	370	209,000

February, 1919

Vinton	4	4	..	640	105,300
Edgerly	4	3	1	260	33,600
Evangeline	3	2	1	20	35,000
Total	11	9	2	920	173,900

March, 1919

Vinton	3	2	1	200	108,500
Edgerly	2	1	1	120	38,750
Evangeline	3	..	3	....	3,100
Total	8	3	5	320	150,350

April, 1919

Vinton	6	5	1	1,975	118,500
Edgerly	1	1	..	100	37,500
Evangeline	3	2	1	125	36,000
Total	10	8	2	2,200	192,000

May, 1919

Vinton	4	3	1	107	116,250
Edgerly	4	3	1	275	36,100
Evangeline	3	..	3	....	29,450
Total	11	6	5	382	181,800

June, 1919

	Completions	Producers	Failures	Initial production	Production for month
Vinton	3	..	3	....	120,000
Edgerly	5	3	2	65	36,000
Evangeline	1	1	..	40	30,000
Total	9	4	5	105	186,000

July, 1919

Vinton	2	1	1	125	122,000
Edgerly	2	..	2	....	36,000
Evangeline	..	..	..	....	31,000
Total	4	1	3	125	189,000

August, 1919

Vinton	2	..	2	....	125,550
Edgerly	1	1	..	75	37,200
Evangeline	..	..	..	....	31,000
Total	3	1	2	75	193,750

September, 1919

Vinton	2	..	2	....	121,500
Edgerly	1	1	..	50	37,500
Evangeline	1	..	1	....	30,000
Total	4	1	3	50	189,000

CONDENSED SUMMARY FOR SOUTHERN LOUISIANA BY MONTHS
(Year Ending October 1, 1919)

October, 1918	8	6	2	10,270	237,700
November, 1918	4	2	2	1,000	209,500
December, 1918	8	7	1	2,855	246,000
January, 1919	13	6	7	370	209,000
February, 1919	11	9	2	920	173,000
March, 1919	8	3	5	320	150,350
April, 1919	10	8	2	2,200	192,000
May, 1919	11	6	5	382	181,800
June, 1919	9	4	5	105	186,000
July, 1919	4	1	3	125	189,000
August, 1919	3	1	2	75	193,750
September, 1919	4	1	3	50	189,000
Total	93	54	39	18,672	2,357,100

CONDENSED SUMMARY FOR NORTH LOUISIANA
(Year Ending October 1, 1919)

	Barrels
October, 1918	1,442,430
November, 1918	1,473,000
December, 1918	1,553,150
January, 1919	1,070,740
February, 1919	1,022,000
March, 1919	1,122,735
April, 1919	1,108,650
May, 1919	1,226,980
June, 1919	1,230,000
July, 1919	1,327,420
August, 1919	1,381,515
September, 1919	1,378,500
Total	15,337,120

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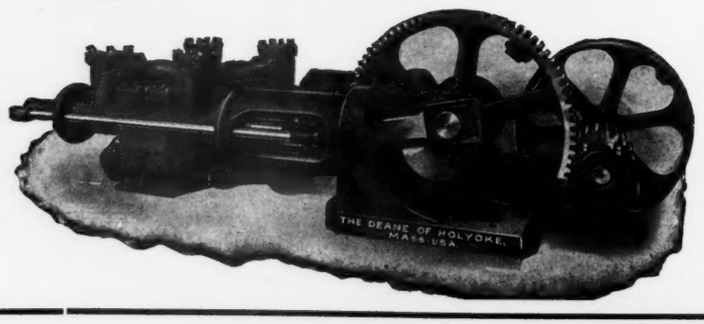

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Fort Worth, Texas

Completions in Stephens County During Past Year

PRODUCING WELLS IN STEPHENS COUNTY.

The following are the producing wells completed in Stephens County, Texas, during the twelve months ending October 1, 1919. This list of wells has been culled from the monthly completion report of The OIL WEEKLY, and all duplications have been eliminated:

OCTOBER, 1918

Company		Well and Farm	Initial	Present	Sand	Remarks
Texas Company	1	W. F. Houston	75	104	3325-3432	shot
Texas Company	3A	J. W. Parks	200	198	3253-3276	flow'g
T. & P. Coal & Oil Co.	1	R. O. Lee	200	23	3080-3111	flow'g
Gulf Production Co.	1	G. R. Davis	650	225	3238-3267	flow'g
Gulf Production Co.	2	Fincher	1500	375	3245-3290	flow'g
Mid-Kansas Oil & Gas Co.	1	L. M. Wright	10	0		

NOVEMBER, 1918

Texas Company	2B	J. W. Parks	200	163	3238-3258	flow'g
Mid-Kansas Oil & Gas Co.	1	J. S. Knott	200	110	3328-3238	flow'g
Sun Company	1	J. H. McMeen	250	95	2140-2183	flow'g
Lone Star Gas Co.	1	W. S. Warren	100	20	1690-1696	flow'g
Moore & Rosier	1	N. Russell	200	33	3211-3232	shot

DECEMBER, 1918

Texas Company	1	N. J. Brooks	125	74	3142-3272	flow'g
Texas Company	1	J. S. Curry	80	160	3271-3340	shot
Texas Company	1	J. M. Parks	50	74	3354-3370	flow'g
Texas Company	1A	J. W. Parks	246	9	3167-3180	shot
Mid-Kansas Oil & Gas Co.	1	W. E. Carey	500	1230	3212-3237	shot

FEBRUARY, 1919

Texas Company	1	K. Stoker	3000	1036	3181-3186	flow'g
T. & P. Coal & Oil Co.	1	M. E. Bradford	700	160	3592-3608	
Gulf Production Co.	1	White	1000	500	3304-3312	flow'g
Sun Compnay	2	J. H. McMeen	350	96	2150-2183	flow'g
Okla. Prod. & Ref. Co.	1	S. F. Swenson	1500	430	3385-3400	shot
Palo Pinto Oil & Gas Co.	1	Swenson	200	318	3240-3283	shot

MARCH, 1919

Texas Company	1	Billingsley	700	35	3170-3196	flow'g
Texas Company	1	R. O. Thomas	200	150	3238-3270	shot
Texas Company	1	W. H. Vick	150	148	3272-3330	shot
T. & P. Coal & Oil Co.	1	C. J. McCleskey	100	8	3500-3505	p'mp'g
T. & P. Coal & Oil Co.	1	Remington	500	440	3078-3118	shot
T. & P. Coal & Oil Co.	2	Rogers	100	50	3104-3124	shot
Gulf Production Co.	2	G. R. Davis	200	225	3171-3305	shot
Gulf Production Co.	1	Winston	400	40	3310-3320	shot
Mid-Kansas Oil & Gas Co.	2	Wm. Yates	130	34	3196-3230	shot
Sinclair Gulf	1	T. J. Ledbetter	400	130	3161-3265	shot
Sinclair Gulf	1	F. A. Manning	400	90	3118-3195	shot
Sun Company	1A	W. E. Carey	250		3080-3120	shot
Casper-Ranger Oil Co.	1	Dr. Evans	150	90	3086-3126	shot

APRIL, 1919

Texas Company	1	J. Black			3365-3435	shot
Texas Company	2	N. J. Brooks	250	309	3273-3283	flow'g
Texas Company	1	Grosclose	600	349	3064-3143	flow'g
Texas Company	1	C. H. Houston	100		3304-3345	fish'g
Texas Company	1	G. W. Keathley	150	23	3245-3316	flow'g
Texas Company	1	J. S. Pierce	400	61	3209-3226	flow'g
Texas Company	2	R. O. Thomas	359	225	3250-3293	flow'g
T. & P. Coal & Oil Co.	1	L. J. Veale	gas	312	3668-3992	flow'g
Gulf Production Co.	1	C. M. Caldwell	1000		3442-3450	flow'g
Gulf Production Co.	4	Fincher	2600	410	3180-3240	flow'g
Mid-Kansas Oil & Gas Co.	1	Satterfield	gas	814	3472-3490	flow'g
Mid-Kansas Oil & Gas Co.	1	Wm. Yates	100	80	3205-3280	shot
Sun Company	3	J. H. McMeen	350	97	2160-2183	shot
Jack Crosbie	1	Hagaman	2500	80	3370-3470	shot
Brazos River Oil Co.	1	Massenberg	2500	1050	3360-3486	shot
Gladstone Oil & Ref. Co.	1	Stevenson	500	223	3518-3535	flow'g
Ranger-Texas Oil Co.	1	Booles	100	20	3402-3415	flow'g
Strab Oil Co.	1	D. Z. Pierce	50	20	1780-1790	flow'g

MAY, 1919

Texas Company	1	E. S. Curry	20	28	3197-3355	shot
Texas Company	3B	J. W. Parks	1280	200	3238-3258	flow'g
Texas Company	2	Sandidge		34	3259-3273	
T. & P. Coal & Oil Co.	11	C. Binney	40	10	1600-1625	p'mp'g
T. & P. Coal & Oil Co.	1	A. Hohertz	40	9	1585-1607	p'mp'g
T. & P. Coal & Oil Co.	2	A. Hohertz	40	14	1605-1637	shot
T. & P. Coal & Oil Co.	3	A. Hohertz	40	23	1593-1628	p'mp'g
Sinclair Gulf	1	Wells	50	6	3458-3515	shot
Sun Company	1	Homer Lee	150	40	3236-3296	shot
Moore & Rosier	3	N. Russell	100	80	2166-2188	shot
Levy et al	1	J. W. Harrison	400	18	3785-3850	shot
Swenson-Dale Oil	1	P. Swenson	5752	2650	3180-3281	flow'g
Texas Company	1	C. B. Brown	500	318	3050-3065	flow'g

JUNE, 1919

Texas Company	2	S. W. Lauderdale	300	90	3158-3240	shot
Texas Company	6	Sandidge		65	3203-3230	shot
Texas Company	7	Sandidge		65	3158-3240	shot
Texas Company	2	K. Stoker	2400	2000	3238-3270	flow'g
T. & P. Coal & Oil Co.	2	M. E. Bradford	100	557	3546-3548	flow'g
T. & P. Coal & Oil Co.	1	E. Y. Jennings	200	175	3586-3616	flow'g
T. & P. Coal & Oil Co.	14	C. Binney	10	7	1622-1628	p'mp'g
Gulf Production Co.	3	G. R. Davis	2640	2075	3127-3283	flow'g
Gulf Production Co.	1	Dulaney	180	180	3224-3274	flow'g
Gulf Production Co.	2	Herrington	1400	1300	3302-3305	flow'g
Gulf Production Co.	2	McCauley	300	2100	3181-3185	flow'g
Sinclair Gulf	1	Satterfield	100	359	3283-3325	flow'g
Sun Company	1A	J. A. Carey	350	400	3302-3310	flow'g
Sun Company	1B	R. O. Rochelle	230	70	3332-3385	shot
Magnolia Petroleum Co.	1	S. F. Lanham	250	90	3205-3253	flow'g
Lone Star Gas Co.	1	J. C. Heatley	110	20	3167-3259	shot
Moore & Rosier	2	N. Russell	220	30	3256-3270	shot
Moore & Rosier	4	N. Russell	1000	550	3227-3350	shot
Prairie Oil & Gas Co.	1	W. M. Guest	500	90	2543-2568	shot

JULY, 1919

Company		Well and Farm	Initial	Present	Sand	Remarks
Texas Company	7	N. J. Brooks	400	94	3156-3221	shot
Texas Company	1	R. F. Brown	25		3203-3230	p'mp'g
Texas Company	2	J. C. Curry	200	210	3238-3243	flow'g
T. & P. Coal & Oil Co.	1	Satterfield	560	410	3121-3128	flow'g
Gulf Production Co.	2	C. M. Caldwell	200	1600	3302-3319	flow'g
Gulf Production Co.	6	Fincher	150	run with Nos. 2, 4		
				1125	3180-3240	flow'g
Gulf Production Co.	1	Gholson	6	12	3615-3619	shot
Mid-Kansas Oil & Gas Co.	2	J. S. Knott	6000	2060	3208-3280	shot
Mid-Kansas Oil & Gas Co.	1	W. H. Tullos	200	490	3183-3237	shot
Sinclair Gulf	1	B. F. Coody		50	3230-3420	shot
Sinclair Gulf	2	B. F. Coody	800	380	3262-3360	shot
Sinclair Gulf	5	B. F. Coody	415	340	3243-3341	shot
Sinclair Gulf	3	T. J. Ledbetter	400	340	3171-3215	shot
Sinclair Gulf	4	T. J. Ledbetter	250	190	3166-3207	shot
Sun Company	5	J. H. McMeen	450	95	2162-2189	flow'g
Magnolia Petroleum Co.	2	C. B. Brown	300	340	3055-3085	flow'g
Lone Star Gas Co.	2	J. C. Heatley	600	1650	3150-3213	flow'g
Okla. Prod. & Ref. Co.	2	S. F. Swenson	700	360	3383-3445	shot
Okla. Prod. & Ref. Co.	3	S. F. Swenson	50	54	3390-3447	flow'g
Okla. Prod. & Ref. Co.	4	S. F. Swenson	250	215	3306-3345	flow'g
Moore & Rosier	5	N. Russell	400	310	3200-3345	shot
Jack Crosbie	2	Hagaman	250	100	3406-3422	to shoot
Cosden Oil & Gas Co.	1	S. S. Vaughn	800	450	3283-3402	shot
Cosden Oil & Gas Co.	2	S. S. Vaughn	1400	680	3299-3410	shot
Columbia Oil & Gas	1	Booles	5		3399-3479	p'mp'g
Pierce Oil Corporation	1	Satterfield	800	194	3262-3267	
States Oil Corporation	1	B. F. Dempsey	100	27	3479-3491	drill'g
Westheimer Oil & Gas Co.	1	Bratton	40	340	3654-3696	shot

AUGUST, 1919

Texas Company	4	S. W. Lauderdale	500	295	3188-3221	flow'g
Texas Company	1B	J. W. Parks	60	45	2292-2307	p'mp'g
Texas Company	2	J. S. Pierce	120	113	3209-3265	drill'g
Texas Company	4	Sandidge	30	35	3158-3240	shot
T. & P. Coal & Oil Co.	1	J. M. Cook	3	3	1986-1998	shot
Gulf Production Co.	8	Fincher	2310	668	3240-3250	flow'g
Gulf Production Co.	1	Herrington	125	168		
Mid-Kansas Oil & Gas Co.	2	J. M. Cook	300	260	3182-3423	shot
Mid-Kansas Oil & Gas Co.	1	J. R. Jackson		320	3252-3384	shot
Mid-Kansas Oil & Gas Co.	2	L. W. Wright	50	44	3183-3263	shot
Mid-Kansas Oil & Gas Co.	1	T. J. Ledbetter	800	375	3266-3280	flow'g
Sinclair Gulf	3	B. F. Coody	350	170	3300-3396	shot
Sinclair Gulf	4	B. F. Coody	500	420	3260-3332	shot
Sinclair Gulf	5	T. J. Ledbetter	1000	750	3270-3336	shot
Sinclair Gulf	6	T. J. Ledbetter	200	170	3193-3274	shot
Magnolia Petroleum Co.	1	C. B. Brown	150	600	3065-3102	flow'g
Magnolia Petroleum Co.	1	Fred Frost	60	45	3206-3260	drill'g
Lone Star Gas Co.	3	W. S. Warren	40	30	1608-1639	shot
Lone Star Gas Co.	4	W. S. Warren	75	60	1598-1613	shot
Okla. Prod. & Ref. Co.	6	S. F. Swenson	1200	950	3360-3503	shot
Moore & Rosier	7	N. Russell	250	70	2150-2160	shot
Casper-Ranger Oil Co.	2	Dr. Evans	400		3188-3198	shot
Pierce Oil Corporation	1	F. C. Burk	200	220	3322-3390	shot
Snowden Bros.	1	Ackers	200	120	3122-3218	drill'g
Weimar Oil Co.	1	Booles	10	10	3388-3430	shot

SEPTEMBER, 1919

Chapman et al's No. 1 Adams	3645	2 M gas
Cunningham et al's No. 2 Evans	3197	150 after shot
D. & R. Oil Co.'s No. 1 Stanford	3415	500 after shot
Empire Gas & Fuel Co.'s No. 1 Wallace	1910	157
Bankers Oil & Gas Co.'s No. 1 McElroy	3280	4 M gas comp.
Gulf Production Co.'s No. 1 Sherman	3060	1000 ft. in hole
Kelley Green Oil Co.'s No. 1 Ledbetter	3304	1000
King Midas Oil Co.'s No. 1 Harris	2720	400 ft. fluid in hole
Kimmel et al's No. 1 Remington	1980	10 M gas
Kimmel et al's No. 1 Holland	2035	15 M gas
Mid-Kansas Oil & Gas Co.'s No. 7 Wright	3263	50, shot
Mid-Kansas Oil & Gas Co.'s No. 1 Vick	3151	Making gas
Mid-Kansas Oil & Gas Co.'s No. 4 Carey	3405	1000 ft. fluid
Magnolia Petroleum Co.'s No. 1 Collins	3537	150 bbls. cleaning
Magnolia Petroleum Co.'s No. 1 Morris	3870	25
Magnolia Petroleum Co.'s No. 1 Gardenshire	3880	60
Monitor Oil Co.'s No. 1 Walker	3210	Two small flows.
Magnolia Petroleum Co.'s No. 1 Ward	3928	2 M gas, 25 bbls.
Magnolia Petroleum Co.'s No. 1 Dulaney	3284	150
Oklahoma Prod. & Ref. Co.'s No. 1 Walker	3194	30
Oklahoma Prod. & Ref. Co.'s No. 13 Swenson	3400	1000
Oklahoma Prod. & Ref. Co.'s No. 14 Swenson	3399	1000
Quakins Petroleum Co.'s No. 1 Satterwhite	2150	25 M gas
Swensondale Oil Co.'s No. 2 Swenson	3175	400
Sun Company's No. 4 McMeen	3390	Gas
Sun Company's No. A2 Carey	3416	60
Stanton Oil Co.'s No. 1 Sudderth	3418	20
Texas Company's No. 8 Sandidge	2246	100
Texas Company's No. 1 Gaswick	2152	8 M gas
T. & P. Coal & Oil Co.'s No. 8 Hohertz	1612	40
West Texas Oil Company's No. 1 Dempsey	3575	40
Western Exploration Co.'s No. 1 McNabb	3378	1600, after shot

STEPHENS COUNTY DRY HOLES

The following are dry holes drilled in Stephens County during the twelve months ending October 1, 1919:

OCTOBER-NOVEMBER, 1918

Company anl Well	Depth	Initial production in barrels	
T. & P. Coal & Oil Co.'s No. 1 Wright		dry	3350
T. & P. Coal & Oil Co.'s No. 1 F. W. Brewer		dry	3560
T. & P. Coal & Oil Co.'s No. 1 Cash		dry	3285
T. & P. Coal & Oil Co.'s No. 1 Brooker		dry	3360

DECEMBER, 1918

T. & P. Coal & Oil Co.'s No. 1 P. Brown	dry	3500
T. & P. Coal & Oil Co.'s No. 1 Haney	dry	3500

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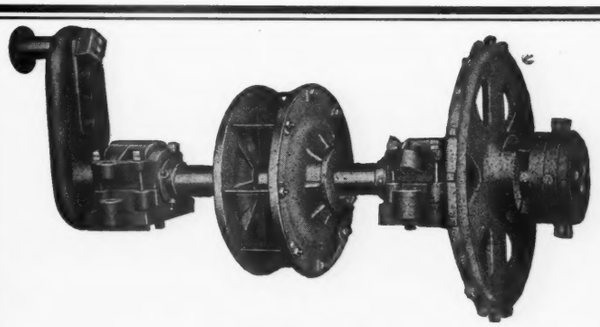

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JANUARY, 1919

Company and Well		Depth
T. & P. Coal & Oil Co.'s No. 1 Bradford	dry	3500
T. & P. Coal & Oil Co.'s No. 1 Dempsey	dry	3510

FEBRUARY, 1919

T. & P. Coal & Oil Co.'s No. 1 Jackson	dry	3287
Texas Company's No. 1B Parks	dry	3250
Texas Company's No. 2B Parks	dry	3380
Prairie Oil & Gas Co.'s No. 1 Proctor	dry	3875
T. & P. Coal & Oil Co.'s No. 1 Pierce	dry	4035
T. & P. Coal & Oil Co.'s No. 1 Bobo	dry	4300

MAY, 1919

Prairie Oil & Gas Co.'s No. 1 Powers	dry	3375

JUNE, 1919

Company and Well		Depth
Sinclair Gulf Oil Co.'s No. 1 Wells	dry	3540

JULY, 1919

Jone Star Oil & Gas Co.'s No. 1 Caswell	dry	

AUGUST, 1919

T. & P. Coal & Oil Co.'s No. 2 McNabb	dry	1385
T. & P. Coal & Oil Co.'s No. 1 Barker	dry	3697

SEPTEMBER, 1919

Sinclair Gulf's No. 1 Wells	dry	3525
Texas Company's No. 2 Pratt	dry	3890
Texas Company's No. 1 Pratt	dry	4020

Completions in Eastland County During Past Year

EASTLAND COUNTY PRODUCING WELLS

The following are the producing wells drilled in Eastland County during the twelve months ending October 1, 1919:

OCTOBER, 1918

Company		Well and Farm	Initial	Present	Sand	Remarks
Cullinan et al	2	J. W. Jones	1200	40	3484-3518	flow'g
Gulf Production Co.	1	F. W. Taylor	1200	110	3438-3464	flow'g
Magnolia Petroleum Co.	1	C. U. Connellee	30	....	1326-1360	
Magnolia Petroleum Co.	1	W. E. Rock	3000	13	3502-3505	flow'g
Prairie Oil & Gas Co.	1	J. R. Wood	1800	40	3456-3467	flow'g
T. & P. Coal & Oil Co.	1	M. R. Hagaman	65	....	3244-3276	
T. & P. Coal & Oil Co.	1	Tibbles	60	....	3425-3430	
Crosbie & Davis	4	J. E. Crosbie	20	10	1315-1330	p'mp'g
Lone Star Gas Co.	1	Goforth	150	19	3481-3494	flow'g
Plains Oil & Gas Co.	1	Harrison	16	....	3169-3184	shot
Plains Oil & Gas Co.	1	Rust & Weir	7	....	3180-3188	shot

NOVEMBER, 1918

Heenan & Coe	1	W. E. Rock	1800	30	3538-3542	p'mp'g
T. & P. Coal & Oil Co.	1	W. R. Hodges	700	....	3470-3481	
T. & P. Coal & Oil Co.	2	N. S. Whitson	30	30	3285-3397	flow'g
T. & P. Coal & Oil Co.	14	F. Brewer	1500	....	3278-3282	flow'g
Crosbie & Davis	3	J. E. Crosbie	20	10	1354-1360	flow'g
Crosbie & Davis	5	J. E. Crosbie	40	10	1334-1341	p'mp'g
J. E. Crosbie	1	Dr. Terrell	10	....	3230-3240	shot
Crowell & Grant	1	Church Lot	1500	10	3273-3278	flow'g

DECEMBER, 1918

Heenan & Coe	2	W. E. Rock	1000	25	3540-3563	p'mp'g
Prairie Oil & Gas Co.	1	Emma Terrell	9000	....	3458-3472	
T. & P. Coal & Oil Co.	3	F. Brewer	1200	....	3270-3280	
T. & P. Coal & Oil Co.	1	H. R. Clemmer	1000	....	3285-3291	
T. & P. Coal & Oil Co.	3	Davenport	850	15	3420-3438	flow'g
T. & P. Coal & Oil Co.	1	W. D. McCleskey	400	381	3198-3210	flow'g
Warren Wagner	2	School Lot	1200	9	3270-3280	flow'g
Prairie Oil & Gas Co.	2	J. N. Terry	400	....	3456-3485	shot

JANUARY, 1919

Cullinan et al	3	J. W. Jones	35	20	3473-3478	flow'g
Gulf Production Co.	1	J. B. Blitch	50	6	3170-3190	shot
Gulf Production Co.	2	State Land	1000	90	3455-3460	flow'g
Gulf Production Co.	2	F. W. Taylor	1500	120	3440-3465	flow'g
Gulf Production Co.	3	F. W. Taylor	400	120	3456-3485	flow'g
Magnolia Petroleum Co.	1	T. W. Connellee	5000	400	3405-3420	flow'g
Magnolia Petroleum Co.	2	W. E. Rock	1500	50	3525-3560	flow'g
Magnolia Petroleum Co.	1	T. J. Nash	1500	90	3505-3515	flow'g
Magnolia Petroleum Co.	2	T. J. Nash	1500	95	3455-3462	flow'g
John Markham	2	S. F. Copeland	600	40	3476-3488	shot
Mid-Kansas Oil & Gas Co.	1	J. N. McCleskey	1200	27	3390-3410	flow'g
Prairie Oil & Gas Co.	1	T. W. Duncan	265	....	3400-3413	
Prairie Oil & Gas Co.	1	S. Duncan	1000	24	3342-3364	flow'g
Prairie Oil & Gas Co.	1	D. A. Hestilow	300	8	3435-3440	flow'g
Prairie Oil & Gas Co.	2	T. J. Earnest	600	....	3295-3305	
Prairie Oil & Gas Co.	4	Ida Slayden	1500	5	3471-3490	flow'g
Prairie Oil & Gas Co.	3	J. W. Terry	2000	....	3371-3382	flow'g
Sun Oil Company	1	J. E. Rust	1000	90	3428-3488	flow'g
Texas Company	1	N. R. Hagaman	100	10	3249-3255	flow'g
Texas Company	4	A. L. Duffer	600	....	3436-3470	
Texas Company	5	A. L. Duffer	400	....	3455-3478	
T. & P. Coal & Oil Co.	13	F. Brewer	1200	....	3290-3312	
T. & P. Coal & Oil Co.	1	W. V. Brewer 15M gas		40	3246-3259	shot
T. & P. Coal & Oil Co.	2	W. V. Brewer	150	....	3250-3259	
T. & P. Coal & Oil Co.	1	I. B. Hand	1000	45	3287-3305	flow'g
T. & P. Coal & Oil Co.	1	Rice	25M gas	....	3460-3475	
Gladstone Oil & Refining Co.	2	Barton	1500	10	3509-3519	flow'g
McMann et al	1	J. C. McDowell	100	....	3174-3192	

FEBRUARY, 1919

Cullinan et al	7	J. W. Jones	50	10	3502-3519	shot
Cullinan et al	8	J. W. Jones	200	15	3498-3533	flow'g
Magnolia Petroleum Co.	2	C. U. Connellee	2	....	1412-1418	
Magnolia Petroleum Co.	1	N. B. Harris	1500	304	3394-3402	flow'g
John Markham	3	S. F. Copeland	600	140	3338-3348	flow'g
John Markham	6	S. F. Copeland	5500	325	3463-3477	flow'g
Prairie Oil & Gas Co.	2	W. M. Myers	2500	76	3297-3309	flow'g
Prairie Oil & Gas Co.	1	K. Roper	6000	700	3434-3444	flow'g
T. & P. Coal & Oil Co.	1	Mrs. McCleskey	800	....	3438-3458	
T. & P. Coal & Oil Co.	3	J. H. McCleskey	50	....	3431-3437	
T. & P. Coal & Oil Co.	4	J. H. McCleskey	50	....	3400-3416	
Bartles Oil Co.	3	Gholson	25	....	3465-3478	
Humble Oil & Refining Co.	1	M. L. Patton	10	....	3287-3296	
Plains Oil & Gas Co.	1	Haynes	90	....	3174-3185	

MARCH, 1919

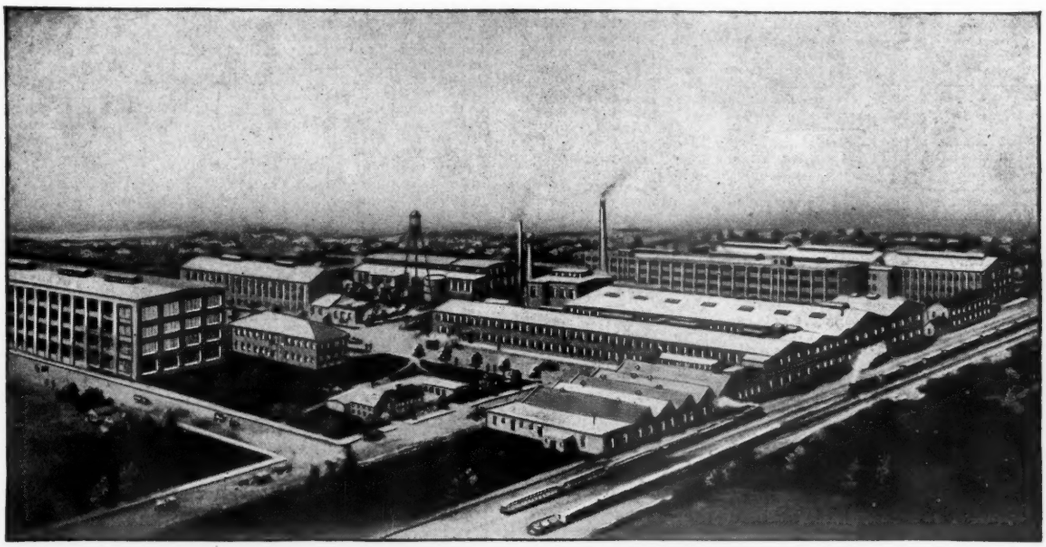
Gulf Production Co.	1	N. P. Brelsford	40	8	3204-3292	flow'g
Gulf Production Co.	6	F. W. Taylor	300	40	3390-3430	flow'g
Heenan & Coe	4	W. E. Rock	700	40	3436-3501	flow'g
John Markham	4	S. F. Copeland 8M gas		200	3504-3508	flow'g
John Markham	5	S. F. Copeland	4500	300	3437-3451	flow'g
John Markham	7	S. F. Copeland	1800	100	3490-3512	flow'g
Mid-Kansas Oil & Gas Co.	2	E. H. Layne	1300	150	3465-3475	flow'g
Prairie Oil & Gas Co.	1A	Christmas	200	25	3465-3485	shot
Prairie Oil & Gas Co.	2A	Christmas	800	101	3440-3470	flow'g
Prairie Oil & Gas Co.	5	Ida Slayden	1200	58	3469-3490	flow'g
Prairie Oil & Gas Co.	4	J. W. Terry	254	....	3463-3501	
Prairie Oil & Gas Co.	4	T. & P. C. Co. fee	100	2	3207-3212	flow'g
Prairie Oil & Gas Co.	4	J. R. Wood	600	9	3450-3478	flow'g
Sun Company	1	Allen Ranch	240	....	3018-3032	
Sun Company	1	Duncan (65 ac.)	50	6	3365-3388	shot
T. & P. Coal & Oil Co.	5	F. Brewer	500	40	3275-3295	flow'g
T. & P. Coal & Oil Co.	1	J. H. Clemmer	30	....	3325-3385	p'mp'g shot
T. & P. Coal & Oil Co.	1	Davenport	800	20	3418-3428	flow'g
T. & P. Coal & Oil Co.	1	L. A. Galloway	5	2	3273-3301	p'mp'g shot
T. & P. Coal & Oil Co.	1	J. T. Gerdes	5	....	3159-3195	shot
T. & P. Coal & Oil Co.	2	I. B. Hand	800	13	3287-3304	flow'g
T. & P. Coal & Oil Co.	1	M. C. Henson	100	....	3259-3278	
T. & P. Coal & Oil Co.	3	W. R. Hodges	35	....	3375-3400	
T. & P. Coal & Oil Co.	6	J. H. McCleskey	96	....	3375-3396	
Wagner & Steiner	1	D. McClesgey	1000	31	3391-3401	flow'g
Wagner & Steiner	2	D. McCleskey	100	20	3460-3475	flow'g
Benedum & Trees	1	C. U. Connellee	50	7	3291-3316	shot
Ranger Prod. & Ref. Co.	1	Hinman	10	....	3170-3190	
Walker & Berry	1	Walker fee	10	....	3162-3181	

APRIL, 1919

Cullinan et al	6	J. W. Jones	20	10	3519-3536	shot
Cullinan et al	9	J. W. Jones	600	90	3505-3528	flow'g
Gulf Production Co.	4	F. W. Taylor	200	60	3505-3533	shot
Gulf Production Co.	5	F. W. Taylor	300	109	3412-3460	flow'g
Magnolia Petroleum Co.	3	W. E. Rock	15	10	3551-3563	flow'g
Magnolia Petroleum Co.	5	W. E. Rock	244	25	3512-3522	flow'g
Magnolia Petroleum Co.	1	N. Walker	40	2	3243-3275	shot
John Markham	1	S. F. Copeland	50	....	3486-3505	flow'g
Prairie Oil & Gas Co.	3B	Christmas	600	9	3345-3591	flow'g
Prairie Oil & Gas Co.	2	T. W. Duncan	200	....	3294-3298	flow'g
Prairie Oil & Gas Co.	2	Ida Slayden	300	5	3458-3487	flow'g
Prairie Oil & Gas Co.	1	J. W. Terry	60	9	3429-3470	flow'g
Prairie Oil & Gas Co.	3	J. R. Wood	18	21	3483-3529	shot
Prairie Oil & Gas Co.	5	J. R. Wood	50	....	3444-3475	shot
Sun Company	2	J. E. Rust	5500	600	3422-3434	flow'g
T. & P. Coal & Oil Co.	17	F. Brewer	900	....	3290-3304	
T. & P. Coal & Oil Co.	2	T. W. Duncan	1200	15	3410-3423	flow'g
T. & P. Coal & Oil Co.	3	L. Huffman	300	300	3245-3267	shot
T. & P. Coal & Oil Co.	2	W. E. McCleskey	20	....	3293-3308	
T. & P. Coal & Oil Co.	1	J. E. McKinney	8	4	3425-3483	p'mp'g shot
T. & P. Coal & Oil Co.	1	J. S. Williams	40	11	3280-3304	p'mp'g
Warren Wagner	3	School Lot	500	8	3280-3300	flow'g
Crosbie & Davis	6	J. E. Crosbie	100	60	3185-3200	shot
Crowell & Grant	2	Church Lot	500	15	3280-3290	flow'g
Dorsey et al	3	A. M. Harrison	500	450	3438-3444	flow'g
Thompson et al	1	Thompson Fee	800	70	3450-3470	flow'g

MAY, 1919

Cullinan et al	5	J. W. Jones	20	10	2494-2522	flow'g
Cullinan et al	10	J. W. Jones	600	90	3452-3509	flow'g
Gulf Production Co.	1	Marie Barnes	500	320	3297-3365	shot
Gulf Production Co.	2	J. B. Blitch	30	6	3300-3320	shot
Gulf Production Co.	4	State land	25	15	3239-3260	shot
Gulf Production Co.	8	F. W. Taylor	200	56	3407-3446	flow'g
Gulf Production Co.	10	F. W. Taylor	400	100	3405-3442	flow'g
Magnolia Petroleum Co.	1	C. E. Allen	20	2	3047-3061	shot
Magnolia Petroleum Co.	1	J. B. Root	30	30	2550-2570	shot
Magnolia Petroleum Co.	4	W. E. Rock	30	....	3505-3520	flow'g
Magnolia Petroleum Co.	3	T. J. Nash	300	150	3614-3650	flow'g
Magnolia Petroleum Co.	4	T. J. Nash	100	50	3686-3707	shot
John Markham	8	S. F. Copeland	200	40	3495-3528	flow'g
John Markham	11	S. F. Copeland	1500	200	3485-3511	flow'g
Mid-Kansas Oil & Gas Co.	1	E. H. Layne	100	....	3429-3492	shot
Prairie Oil & Gas Co.	1	M. V. Brewer	50	10	3225-3355	flow'g
Prairie Oil & Gas Co.	1B	Christmas	700	109	3440-3478	flow'g
Prairie Oil & Gas Co.	2B	Christmas	200	9	3408-3450	flow'g
Prairie Oil & Gas Co.	1	B. A. Danley	2600	1331	3596-3604	flow'g
Prairie Oil & Gas Co.	3	T. W. Duncan	581	....	3330-3380	flow'g
Prairie Oil & Gas Co.	1B	Keaghey	1200	339	3354-3404	flow'g
Prairie Oil & Gas Co.	1	W. M. Myers	600	76	3225-3330	flow'g
Prairie Oil & Gas Co.	11	Emma Terrell	75	84	3419-3455	shot
Prairie Oil & Gas Co.	1	T. & P. C. Co. fee	240	3	3190-3195	flow'g
Prairie Oil & Gas Co.	7	T. & P. C. Co. fee	20	2	3350-3385	shot
Sun Company	1	J. W. Copes	10	....	2986-3021	shot
Sun Company	1	Duncan (65 ac.)	100	6	3135-3190	shot
Sun Company	2	Lauderdale	2000	304	3375-3392	flow'g
Sun Company	3	J. E. Rust	1200	400	3420-3434	flow'g
Texas Company	2	N. R. Hagaman	150	20	3452-3472	flow'g
Texas Company	1	S. W. Kennedy	500	90	3438-3456	flow'g
T. & P. Coal & Oil Co.	18	F. Brewer	100	....	3290-3315	
T. & P. Coal & Oil Co.	3	J. K. Butler	4000	407	3426-3467	flow'g
T. & P. Coal & Oil Co.	1	G. S. Fox	7	15	1325-1332	p'mp'g
T. & P. Coal & Oil Co.	2	G. S. Fox	7	15	1323-1330	p'mp'g
T. & P. Coal & Oil Co.	3	I. B. Hand	1500	45	3290-3315	flow'g
T. & P. Coal & Oil Co.	1	L. Huffman	200	83	3282-3319	shot
T. & P. Coal & Oil Co.	3	McCleskey Hrs.	500	....	3403-3440	shot
T. & P. Coal & Oil Co.	1	J. S. Whitson	200	40	3338-3347	shot
Dorsey et al	2	A. M. Harrison	5600	600	3448-3466	flow'g
Folson & Sheffler	1	Colony School	500	195	3442-3504	flow'g



Where Everything in **RUBBER** for Oil Field Work

is

ORIGINATED BY PRACTICAL OIL FIELD MEN

PERFECTED BY TECHNICALLY TRAINED LABORATORY MEN

MANUFACTURED BY EXPERT WORKMEN

THE MANHATTAN RUBBER MFG. CO.
Specialists on Rubber Products for the Oil Fields
Factories and Executive Offices
Passaic, N. J.

IDEAL DISTRIBUTING CONNECTIONS

Company		Well and Farm	Initial	Present	Sand	Remarks
Gladstone Oil & Refining Co.	1	Barton	600	15	3517-3530	flow'g
Gladstone Oil & Refining Co.	3	Barton	500	10	3290-3309	shot
Gladstone Oil & Refining Co.	5	Barton	50	10	3548-3566	shot
Humble Oil & Refining Co.	2	M. L. Patton	500	16	3395-3411	flow'g
McKensie et al	1	S. S. Griffin	100	72	3489-3525	flow'g
Sinclair Gulf	1	D. B. Thompson	300	43	3318-3428	flow'g
Tidal Oil Co.	1	B. L. Danley	200	244	3365-3386	flow'g
JUNE, 1919						
Gulf Production Co.	1	W. A. Parton	50	20	3360-3415	shot
Gulf Production Co.	7	F. W. Taylor	100	44	3168-3200	flow'g
Gulf Production Co.	9	F. W. Taylor	1160	200	3405-3475	flow'g
Gulf Production Co.	11	F. W. Taylor	40	20	3388-3435	shot
Jake Hamon	1	J. C. Christmas	350	120	3442-3490	shot
Mag. & Hogg Creek	1	J. N. Sparks	72	18	3054-2884	flow'g
Magnolia Petroleum Co.	2	Julia Davis	2500	401	3400-3450	flow'g
Magnolia Petroleum Co.	1	P. O. Harris	200	57	3388-3415	flow'g
Magnolia Petroleum Co.	6	W. E. Rock	150	50	3535-3552	p'mp'g
Magnolia Petroleum Co.	5	J. T. Nash	100	50	3473-3484	shot
Magnolia Petroleum Co.	8	J. T. Nash	250	150	3632-3704	shot
John Markham	9	S. F. Copeland	900	300	3322-3332	flow'g
John Markham	13	S. F. Copeland	2000	323	3508-3535	flow'g
Mid-Kansas Oil & Gas Co.	1	S. S. Griffin	200	27	3429-3450	shot
Prairie Oil & Gas Co.	3	W. M. Myers	950	76	3290-3327	flow'g
Prairie Oil & Gas Co.	2	K. Roper	3000	740	3425-3488	flow'g
Prairie Oil & Gas Co.	3	Ida Slayden	200	5	3440-3476	flow'g
Prairie Oil & Gas Co.	4	Emma Terrell	1181	----	3448-3478	
Prairie Oil & Gas Co.	5	Emma Terrell	130	----	3415-3445	flow'g
Prairie Oil & Gas Co.	8	Emma Terrell	1000	----	3452-3491	
Sun Company	6	J. E. Rust	300	440	3434-3439	flow'g
Texas Company	1	Boyd	4200	1439	3448-3465	flow'g
Texas Company	2	S. T. Boyd	3800	1439	3459-3476	flow'g
T. & P. Coal & Oil Co.	1	M. M. Myers	10	----	3388-3406	
Wagner & Steiner	3	D. McCleskey	100	8	3412-3460	flow'g
Chapman et al	1	W. M. Wright	800	108	3418-3438	shot
Dorsey et al	5	A. M. Harrison	2500	550	3446-3463	flow'g
Dorsey et al	6	A. M. Harrison	350	400	3437-3457	flow'g
Eastland Midway	1	W. G. Brunette	50	19	3261-3282	shot
Humble Oil & Refining Co.	1	J. M. Scott	100	64	3417-3439	flow'g
Monitor Oil Co.	1	W. A. Parton	50	50	3417-3450	flow'g
Monitor Oil Co.	2	W. A. Parton	50	40	3263-3477	shot
Root, Huff & Duff	1	E. Perkins	7000	1740	3517-3536	flow'g
Sinclair Gulf	1	J. E. Barnes	600	200	3653-3673	flow'g
Sinclair Gulf	1	H. F. Harpool	100	62	3221-3255	flow'g
States Oil Corporation	1	J. T. Parrock	200	----	3662-3870	p'mp'g
States Oil Corporation	1	C. E. Norwood	50	14	3127-3142	p'mp'g
Tex-Rickard	1	B. E. Cotton	850	214	3405-3434	flow'g
Tidal Oil Co.	2	B. L. Danley	2000	244	3406-3446	flow'g
Leon Oil Co.	1	E. A. Allen	350	20	3437-3467	p'mp'g
JULY, 1919						
Gulf Production Co.	3	J. B. Blitch	25	6	3320-3335	shot
Gulf Production Co.	5	State land	500	100	3424-3470	flow'g
Magnolia Petroleum Co.	2	T. W. Connellee	1560	400	3428-3442	flow'g
Magnolia Petroleum Co.	1	R. S. Harris	3800	850	3422-3451	flow'g
Mid-Kansas Oil & Gas Co.	1	Johnson et al	10	9	3171-3211	shot
Mid-Kansas Oil & Gas Co.	10	E. H. Layne	20	109	3442-3483	p'mp'g
Prairie Oil & Gas Co.	4B	Christmas	50	9	3348-3390	shot
Prairie Oil & Gas Co.	1	L. P. Cunningham	600	578	3373-3392	flow'g
Prairie Oil & Gas Co.	5	T. J. Earnest	1000	485	3296-3330	flow'g
Prairie Oil & Gas Co.	2A	Keaghey	138	20	3327-3354	shot
Prairie Oil & Gas Co.	3	K. Roper	1350	700	3442-3446	flow'g
Prairie Oil & Gas Co.	4	K. Roper	60	49	3453-3490	flow'g
Prairie Oil & Gas Co.	1	J. T. Roper	37	20	3270-3274	flow'g
Prairie Oil & Gas Co.	6	Ida Slayden	25	9	3479-3511	p'mp'g
Prairie Oil & Gas Co.	9	Emma Terrell	25	----	3451-3466	p'mp'g
Prairie Oil & Gas Co.	12	Emma Terrell	200	84	3440-3462	flow'g
Prairie Oil & Gas Co.	2	J. R. Wood	27	4	3420-3460	flow'g
Sun Company	2	Blackwell	10	----	3103-3107	
Sun Company	4	J. E. Rust	1800	400	3425-3439	flow'g
T. & P. Coal & Oil Co.	16	F. Brewer	100	----	3289-3308	
T. & P. Coal & Oil Co.	3	H. R. Clemmer	25	----	3311-3325	
T. & P. Coal & Oil Co.	4	J. K. Butler	1400	437	3410-3454	flow'g
T. & P. Coal & Oil Co.	5	J. K. Butler	2000	462	3414-3451	flow'g
T. & P. Coal & Oil Co.	5	Mrs. McCleskey	25	80	3456-3472	shot
T. & P. Coal & Oil Co.	1	W. E. McCleskey	100	----	3297-3318	
T. & P. Coal & Oil Co.	1	B. E. Reynolds	25	----	3175-3215	shot
Wagner & Steiner	2	D. McCleskey	200	20	3411-3440	flow'g
Wagner & Steiner	4	McCleskey	50	5	3440-3468	shot
Albers Oil Co.	1	Turner	4000	1760	3508-3519	flow'g
Benedum & Trees	1	Connellee	200	164	3468-3492	flow'g
Eclipse Oil Co.	1	O. J. Cotton	800	376	3425-3436	flow'g
R. O. Harvey	1	B. V. Cotton	3000	600	3419-3425	flow'g
Humble Oil & Refining Co.	1	J. O. Sue	100	107	3462-3485	shot
W. E. Jones et al	1	R. L. Howard	25	7	3495-3518	p'mp'g
Plains Oil & Gas Co.	1	Barnett	200	----	3158-3188	flow'g
Ranger-Duncan et al		Monnie Sibley	5	----	3440-3480	
Sinclair Gulf	4	H. F. Harpool	25	20	3320-3333	shot
States Oil Corporation	1	M. E. Turner	700	369	3509-3520	flow'g
AUGUST, 1919						
Gulf Production Co.	2	Marie Barnes	3500	1700	3242-3256	flow'g
Gulf Production Co.	2	Marie Barnes	250	140	3374-3388	flow'g
Gulf Production Co.	1	M. H. Hagaman	15	5	3383-3500	shot
Gulf Production Co.	6	State land	15	5	3416-3476	p'mp'g
Gulf Production Co.	12	F. W. Taylor	240	90	3421-3477	flow'g
Heenan & Coe	6	W. E. Rock	290	140	3490-3514	flow'g
Mag. & Hogg Creek	1	I. C. Berry	15	9	2911-2930	flow'g
Magnolia Petroleum Co.	3	T. W. Connellee	1000	400	3418-3472	flow'g
Magnolia Petroleum Co.	6	T. W. Connellee	1500	469	3425-3441	flow'g
Magnolia Petroleum Co.	2	N. B. Harris	150	30	1795-1866	p'mp'g
Magnolia Petroleum Co.	1	W. A. Harris	80	40	3466-3485	flow'g
Magnolia Petroleum Co.	7	W. E. Rock	75	20	3520-3548	flow'g
Magnolia Petroleum Co.	8	W. E. Rock	70	15	3527-3558	flow'g
Magnolia Petroleum Co.	7	T. J. Nash	70	30	3590-3598	flow'g
John Markham	14	S. F. Copeland	1000	200	3492-3530	flow'g
John Markham	17	S. F. Copeland	1500	300	3496-3511	flow'g
Mid-Kansas Oil & Gas Co.	3	E. H. Layne	10	8	3444-3464	flow'g
Mid-Kansas Oil & Gas Co.	2	J. N. McCleskey	200	90	3420-3485	shot
Prairie Oil & Gas Co.	6B	Christmas	17	9	3432-3470	shot
Prairie Oil & Gas Co.	8	H. L. Howard	432	160	3500-3535	shot
Prairie Oil & Gas Co.	1	T. J. Earnest	300	----	3295-3312	
Prairie Oil & Gas Co.	3	T. J. Earnest	5	----	3110-3114	
Prairie Oil & Gas Co.	5	K. Roper	1900	500	3435-3477	flow'g
Prairie Oil & Gas Co.	6	K. Roper	1500	500	3250-3273	flow'g
Prairie Oil & Gas Co.	7	Ida Slayden	600	58	3467-3519	flow'g
Prairie Oil & Gas Co.	3	Emma Terrell	325	90	3428-3446	flow'g
Prairie Oil & Gas Co.	6	Emma Terrell	27	10	3402-3440	shot
Sun Company	1	L. Parsons	60	8	3249-3264	shot
Texas Company	1	G. W. Maxwell	16	7	1536-1554	p'mp'g
T. & P. Coal & Oil Co.	6	J. K. Butler	2500	462	3442-3477	flow'g
T. & P. Coal & Oil Co.	10	J. K. Butler	3700	895	3406-3431	flow'g
T. & P. Coal & Oil Co.	1	W. C. Gholson	5	----	3388-3420	shot
T. & P. Coal & Oil Co.	1	W. H. Gholson	5	----	3310-3365	shot
T. & P. Coal & Oil Co.	5	L. B. Hand	50	20	3263-3304	p'mp'g
T. & P. Coal & Oil Co.	7	I. B. Hand	600	200	3286-3304	flow'g
T. & P. Coal & Oil Co.	1	L. B. Huffman	35	8	3265-3285	shot
T. & P. Coal & Oil Co.	4	W. E. McCleskey	50	10	3351-3376	shot
T. & P. Coal & Oil Co.	2	G. E. Norwood	1500	1282	3445-3451	flow'g
T. & P. Coal & Oil Co.	2	J. M. Rust	10	----	3430-3470	flow'g
T. & P. Coal & Oil Co.	3	N. Walker	15	----	3169-3179	flow'g
Balentine et al	1	Pleasant Grove	2400	172	3908-3919	flow'g
Benedum & Trees	2	C. U. Connellee	200	167	3309-3320	flow'g
Dorsey et al	7	Harrison	40	20	3420-3447	flow'g
Dorsey et al	8	Harrison	1800	900	3440-3465	flow'g
Gates Oil Co.	1	W. T. Barker	200	100	3520-3525	flow'g
R. O. Harvey	4	B. V. Cotton	600	450	3408-3434	flow'g
Hueco-Ranger Oil Co.	1	S. S. Holleman	1000	786	1895-1906	flow'g
Monitor Oil Co.	4	W. A. Parton	700	300	3458-3460	flow'g
Mother Pool Oil Co.	1	J. Z. Miller	70	10	1560-1582	flow'g
Sinclair Gulf Oil Co.	1	B. L. Danley	2000	1100	3329-3376	flow'g
Sinclair Gulf Oil Co.	2	W. T. Davis	400	100	3526-3536	flow'g
Sinclair Gulf Oil Co.	1	M. H. Hagaman	10	5	3349-3362	shot
Sinclair Gulf Oil Co.	2	H. F. Harpool	160	40	3233-3266	shot
Sinclair Gulf Oil Co.	5	H. F. Harpool	212	20	3223-3258	shot
Tex-Rickard	1	W. T. Barker	100	50	3570-3576	flow'g
Westheimer Oil & Gas Co.	1	S. S. Griffin	40	15	3350-3387	shot
Westheimer Oil & Gas Co.	1	L. S. Hamilton	15	----	3205-3430	p'mp'g shot
West Virginia Oil Co.	1	E. V. Cotton	50	18	3432-3458	p'mp'g

SEPTEMBER, 1919

Company and Well	Depth	Initial production in barrels
Atlas Oil Co.'s No. 3 Mann	3200	½ M gas
Artizonne et al's No. 1 Kincaid	3220	500
Barclay et al's No. 1 Turner	3526	1500
Berkley Oil Co.'s No. 1 Turner	3534	1500
Balentine et al's No. 2 M. E. Church	3340	400
Cosden Oil & Gas Co.'s No. 2 Holcomb	1591	Gasser
Chapman et al's No. 1 Sue	3496	600, tools in hole
Dorsey et al's No. 9 Harrison	3445	500
Drillers Oil Co.'s No. 1 Barnes	3539	4800
Empire Gas & Fuel Co.'s No. 1 Peoples	3580	1000
Eclipse Oil Co.'s No. 1 Cotton	3445	12 M gas
Falson Petroleum Co.'s No. 1 Hawk	1510	3 M gas
Gulf Production Co.'s No. 1 Perkins	3342	2300
Gulf Production Co.'s No. 1 T. Perkins	3008	1200
Gillespie et al's No. 1 O. J. Cotton	3430	8 M gas
Heuco-Ranger Oil Co.'s No. 2 Hollerman	1910	800
Harvey's No. 4 Cotton	3434	3000
Hercules Petroleum Co.'s No. 1 Holleman	1912	125
Humble Oil & Refining Co.'s No. 3 Davis	3568	400
Humble Oil & Refining Co.'s No. 2 Scott	3005	1000 ft. in hole
Heivick et al's No. 1 Sue	3500	20, shot
Humble Oil & Refining Co.'s No. 1 McCord	3530	75
Jackson Oil & Refining Co.'s No. 1 Cooksie	3385	2 M gas
Leon Oil Co.'s No. 4 Allen	3300	200
Mother Pool Oil Co.'s No. 2 Miller	1574	15 M gas
Magnolia Petroleum Co.'s No. 8 T. W. Connellee	1404	75 on beam
Magnolia Petroleum Co.'s No. 5 Connellee	3480	1200
Prairie Oil & Gas Co.'s No. 2 Cunningham	3315	20 M gas
Ocean Oil Co.'s No. 1 Brooks	3335	1200, drilling
Prairie Oil & Gas Co.'s No. 16 Roper	1570	6 M gas
Prairie Oil & Gas Co.'s No. 7 Roper	3475	200
Prairie Oil & Gas Co.'s No. 13 Terrell	3346	300
Porter Wertz Oil Syndicate's No. 2 Perkins	3390	200
Prairie Oil & Gas Co.'s No. 12 E. Roper	3320	1200
Parton Oil Co.'s No. 1 Moss	3425	100 by heads
Prairie Oil & Gas Co.'s No. 21 Roper	3491	100
Prairie Oil & Gas Co.'s No. 11 Roper	3390	100
Root, Huff & Duff's No. 1 Poteet	3398	3000
Root, Huff & Duff's No. 4 Poteet	3570	4800
Ranger-Rock Island Oil Co.'s No. 1 Wright	3455	3000
Ranger Stephens Oil Co.'s No. 1 Sue	3524	250
Sun Company's No. 5 Rust	3550	200
States Oil Corporation's No. 1 T. Y. Butler	3670	3500
Sun Company's No. 8 Rust	3325	100
States Oil Corporation's No. 1 Morton	3610	100
Southwestern Oil Co.'s No. 1 Brook Heirs	3380	2400
Sinclair Gulf Oil Co.'s No. 1 Danley	3376	600
Skelly & Sankey's No. 1 Scott	3248	75, some gas
Sinclair Gulf Oil Co.'s No. 1 McGlothian	3483	½ M gas
Southwestern Oil Co.'s No. 1 Woods	3395	400
T. & P. Coal & Oil Co.'s No. 5 T. W. Duncan	3452	300
T. & P. Coal & Oil Co.'s No. 14 Butler	3452	1200
T. & P. Coal & Oil Co.'s No. 4 W. E. McCleskey	3376	50
Texas Company's No. 3 Littleton	3380	2500
T. & P. Coal & Oil Co.'s No. 3 Henson	3375	35
T. & P. Coal & Oil Co.'s No. 11 Butler	3455	400
Texas Company's No. 1 Hise	3363	200
T. & P. Coal & Oil Co.'s No. 6 Hand	3315	300
T. & P. Coal & Oil Co.'s No. 12 Butler	3488	800
Texas Crude Oil Co.'s No. 1 Sue	3536	50
Texas Crude Oil Co.'s No. 1 Sue	3536	50
Tulsa Production Co.'s No. 1 Sue	3540	50
Texoleum Oil Co.'s No. 1 Thompson	1920	30 M gas
Thraves et al's No. 1 Corner School	1785	40 M gas

EASTLAND COUNTY DRY HOLES

The following are dry holes and failures drilled in Eastland County during the twelve months ending October 1, 1919:

Company and Well		Depth
Prairie Oil & Gas Co.'s Nofl 1 Vick	dry	3775
T. & P. Coal & Oil Co.'s No. 2 Stuart	dry	3225
T. & P. Coal & Oil Co.'s No. 1 Lane	dry	3505
Humble Oil & Refining Co.'s No. 4 Jones	dry	3240
T. & P. Coal & Oil Co.'s No. 2 Walker	dry	3610
T. & P. Coal & Oil Co.'s No. 4 Duncan	dry	1335
T. & P. Coal & Oil Co.'s No. 2 Williams	dry	3638
Gilliland et al's No. 1 Bullock School	dry	3450
Humble Oil & Refining Co.'s No. 3 Patton	dry	3595
Dunlap et al's No. 3 Rock	dry	3622
Dunlap et al's No. 5 Rock	dry	3304
T. & P. Coal & Oil Co.'s No. 5 Fox	dry	1365
T. & P. Coal & Oil Co.'s No. 1 C. W. Hodges	dry	3395
T. & P. Coal & Oil Co.'s No. 2 S. W. Bobo	dry	3500
T. & P. Coal & Oil Co.'s No. 1 T. E. Beck	dry	3674
T. & P. Coal & Oil Co.'s No. 15 V. Brewer	dry	3125
T. & P. Coal & Oil Co.'s No. 1 L. Huffman	dry	3520
T. & P. Coal & Oil Co.'s No. 1 C. E. Davis	dry	3470
T. & P. Coal & Oil Co.'s No. 2 M. H. Hagaman	dry	3436

Humble Oil & Refining Company

General Offices
HOUSTON, TEXAS

Producers, Refiners and Marketers of

PETROLEUM

OKLAHOMA, NORTH TEXAS, CENTRAL-WEST TEXAS AND GULF COAST FIELDS

LOADING RACK—Central-West Texas, Ranger, Texas
" " — " " " Comyn, Texas
" " —North Texas, Burkburnett, Texas
" " — " " Iowa Park, Texas
" " —Gulf Coast, Goose Creek, Texas
" " — " " Pledger, Texas
GASOLINE PLANT—Iowa Park, Texas, Healdton, Okla.
REFINERY—San Antonio, Texas.

Now Nearing Completion

Refinery and Docks on Houston Ship Channel
Also Docks at Texas City for Deep Sea Loading

Company and Well		Depth
T. & P. Coal & Oil Co.'s No. 2 J. W. Tibbles	dry	3480
T. & P. Coal & Oil Co.'s No. 1 M. Walker	dry	3805
T. & P. Coal & Oil Co.'s No. 2 Lee Williams	dry	3638
T. & P. Coal & Oil Co.'s No. 1 J. E. Beidleman	dry	3463
T. & P. Coal & Oil Co.'s No. 2 O. P. England	lry	3477
T. & P. Coal & Oil Co.'s No. 36 O. P. England	dry	3475
T. & P. Coal & Oil Co.'s No. 1 H. A. Demie	dry	3645
T. & P. Coal & Oil Co.'s No. 1 N. S. Whitson	dry	3400
T. & P. Coal & Oil Co.'s No. 1 H. D. Cooper	dry	3588
T. & P. Coal & Oil Co.'s No. 1 M. A. Glenn	dry	3375
T. & P. Coal & Oil Co.'s No. 1 Eva McDowell	dry	3240
T. & P. Coal & Oil Co.'s No. 1 W. T. Pitcock	dry	4020
T. & P. Coal & Oil Co.'s No. 1 S. A. Berry	dry	3436
T. & P. Coal & Oil Co's No. 1 S. J. Davenport	dry	3710
T. & P. Coal & Oil Co.'s No. 1 V. B. Cooper	dry	3755
T. & P. Coal & Oil Co.'s No. 3 V. B. Cooper	dry	3522
T. & P. Coal & Oil Co.'s No. 2 M. M. Myers	dry	3448
T. & P. Coal & Oil Co.'s No. 1 W. R. Hodges	dry	3502
T. & P. Coal & Oil Co.'s No. 1 N. S. Whitson (Pr. Conner)	dry	3795
T. & P. Coal & Oil Co.'s No. 1 T. & P. R. R.	dry	3352
Barnsdal Oil Co.'s No. 1 J. Brown	dry	3680
Cunningham et al's No. 2 R. C. Riddle	dry	3670
Cosden Oil & Gas Co.'s No. 1 O. C. Holcomb	dry	3830
Crosbie & Davis' No. 1 J. E. Crosbie	dry	3800
Gulf Production Co.'s No. 1 V. Allen	dry	4010
Gulf Production Co.'s No. 1 Cantrell	dry	3625
Gulf Production Co.'s No. 1 E. C. Downtsin	dry	3623
Gulf Production Co.'s No. 1 State lands	dry	3441
Prairie Oil & Gas Co.'s No. 1 Jack Phillips	dry	3210
Prairie Oil & Gas Co.'s No. 1 J. E. Barnes	dry	4300
Prairie Oil & Gas Co.'s No. 1 J. L. Parrish	dry	3646
Prairie Oil & Gas Co.'s No. 1 J. H. Bransford	dry	3950
Prairie Oil & Gas Co.'s No. 1 J. T. Falls	dry	4070
Prairie Oil & Gas Co.'s No. 2 J. T. Falls	dry	3700
Prairie Oil & Gas Co.'s No. 1 E. R. Webb	dry	3500
Prairie Oil & Gas Co.'s No. 3 T. & P. fee	dry	3612
Prairie Oil & Gas Co.'s No. 4 W. M. Myers	dry	3325
Leon Oil Co.'s No. 1 Parker & Stuart	dry	3565
Leon Oil Co.'s No. 1 Minnie Sibley	dry	3575
Lone Star Gas Co.'s No. 1 M. H. Hagaman	dry	3752

Company and Well		Depth
Mid-Kansas Oil & Gas Co.'s No. 1 J. M. Rush	dry	3595
Mid-Kansas Oil & Gas Co.'s No. 1 F. M. Rice	dry	3515
C. N. Root's No. 1 T. Cooper	dry	3030
Magnolia Petroleum Co.'s No. 1 E. H. Webb	dry	3672
McAllister et al's No. 1 Bourland et al	dry	3505
Midlothian Oil Co.'s No. 1 J. T. Hazzard	dry	1620
Humble Oil & Refining Co.'s No. 1 Smith	dry	3445
Seaver Valley's No. 1 C. Lyons	dry	3400
Gladstone Oil & Refining Co.'s No. 1 Rev. Ray	dry	3480
Gladstone Oil & Refining Co.'s No. 7 Barton	dry	3540
Plains Oil & Gas Co.'s No. 1 Rawls	lry	2700
Ranger-Cisco's No. 1 C. W. Wright	dry	3525
Sinclair Gulf's No. 1 Demoss	dry	3505
Sinclair Gulf's No. 2 Demoss	dry	3425
Texas Company's No. 1 A. L. Duffer	dry	3263
Texas Company's No. 3 N. H. Hagaman	dry	3552
Warren Wagner's No. 1 D. McCleskey (13 ac.)	dry	3520
Westheimer et al's No. 1 H. Brashear	dry	3645
Sun Oil Co.'s No. 2 Allen Ranch	dry	3307
Sun Oil Co.'s No. 1 Lauderdale	dry	3220
Sammies Oil Co.'s No. 1 J. L. Johnson	dry	3510
Sun Oil Co.'s No. 1 V. N. A. Blackwekk	dry	3406
Sun Oil Co.'s No. 1 C. N. Fee	dry	4012
Dorsey et al's No. 1 Harrison & Moore	dry	3800
Sermans Oil Co.'s No. 1 Havemeyer & Semans	dry	3525
System Oil Co.'s No. 1 Underwood	dry	3575
Atlas Oil Co.'s No. 1 W. A. Mann	dry	3570
Leon Oil Co.'s No. 2 H. Brashear	dry	3620
Ranger-Hudson's No. 1 J. Z. Miller	lry	3765
Rogers et al's No. 1 State land	dry	3480
Roxana-Wallace's No. 1 J. W. Rudd	dry	3111
Harwell et al's No. 1 Demoss	dry	3380
Hercules Oil Co.'s No. 1 W. A. Mann	dry	3915
Hivick & Moler's No. 1 56-ft. Strip T. & P. fee	dry	3560
Harwell Bros.' No. 1 Moss	dry	3370
Magnolia Petroleum Co.'s No. 1 Davis	dry	4060
Prairie Oil & Gas Co.'s No. 6 Howard	dry	3480
Prairie Oil & Gas Co.'s No. 2 Terrell	dry	3484
Texas Company's No. 3 Hagaman	dry	3454
T. & P. Coal & Oil Co.'s No. 2 Hidges	dry	3861

West Texas Wildcat Completions for Year Ending Oct. 1

The following are wildcat wells completed in Central West Texas during the twelve months ending October 1, 1919:

OCTOBER, 1918

Company and Well	Depth	Remarks
Carter et al's No. 1 Davis (Brown Co.)	1180	8 M gas
Miller & Kidd's No. 1 Greely (Brown Co.)	1485	Dry
Magnolia Petroleum Co.'s No. 1 Sealy (Coleman Co.)	3557	5 Bbls.
T. & P. C. & O. Co.'s Gailey (Erath Co.)		Dry
T. & P. C. & O. Co.'s Long (Erath Co.)	3400	Dry
Byrd & Bland's No. 1 Dabney (Coleman Co.)	100	Abandoned
Skelley & Sankey's No. 1 Gray (Coleman Co.)	2570	Drv
Root & Ramsey's No. 1 Watson (Coleman Co.)	1540	10
Magnolia Pet. Co.'s No. 4 Morris (Coleman Co.)		Abandoned
Collins et al's No. 1 Low (Brown Co.)	1275	Abandoned
Cosden Oil & Gas Co.'s No. 1 Gray (Coleman Co.)		30

NOVEMBER, 1918

Company and Well	Depth	Remarks
Mid-West Oil Co.'s No. 1 Smith (Palo Pinto Co.)	4300	Dry
Oil States Pet. Co.'s No. 1 Alvis (Brown Co.)	3163	Dry
Cunningham et al's No. 1 Beakley (McCulloch Co.)	2390	Abandoned
Magnolia Pet. Co.'s No. 5 Morris (Coleman Co.)	3430	75

DECEMBER, 1918

Company and Well	Depth	Remarks
Vandersall & Shipp's No. 1 Pope (Coleman Co.)		10
Vandersall & Shipp's No. 2 Pope (Coleman Co)		15
Teatsworth & Dodwell's No. 1 Chandler	1675	Dry
Bailey et al's No. 1 Gillman (Brown Co.)	2440	Gas
Carter et al's No. 1 Davis (Brown Co.)	2200	Drv
Burkett & Phillips' No. 1 Wilson (Palo Pinto Co.)	4250	Gas

JANUARY, 1919

Company and Well	Depth	Remarks
Sinclair Gulf Oil Co.'s No. 1 Abrams (Palo Pinto Co.)	1000	3 M gas
Prairie Oil & Gas Co.'s No. 1 Miller (Coleman Co.)	2265	Dry
Wood & Wooley's No. 2 Overall (Coleman Co.)		Drv
Mitchell & Sons' No. 4 Gray (Coleman Co.)	1840	Gas
Prairie Oil & Gas Co.'s No. 1 Rogers (Palo Pinto Co.)	3700	Salt water
Robertson & Sons' No. 1 Wallace (Coleman Co.)		Abandoned
Burdett Oil Co.'s No. 1 Mays (Coke Co.)		Abandoned
Texas Company's No. 1 Willis (Shackleford Co.)	2900	Abandoned

FEBRUARY, 1919

Company and Well	Depth	Remarks
Consumers Gas & Fuel Co.'s No. 1 Whatley (Palo Pinto)	800	5 M gas
R. O. Harvey's No. 1 Cathey (Callahan Co.)	3680	Show
Skinner et al's No. 1 McCabe (Coke Co.)	450	Abandoned
Cosden Oil & Gas Co.'s No. 1 Hall (McCulloch Co.)	740	Abandoned
Burton et al's No. 1 Green (Palo Pinto Co	1560	Abandoned

MARCH, 1919

Company and Well	Depth	Remarks
Sinclair Gulf Oil Co.'s No. 1 Gaines (Brown Co.)	2520	100
McJunkin et al's No. 1 Sewell (Brown Co.)	1665	Abandoned
Mitchell & Sons' No. 3 Gray (Coleman Co.)	755	Abandoned
San Diego Texas Oil Co.'s No. 1 Clegg (Tom Green Co)	805	Abandoned
Ft. Phantom Hill Oil Co.'s No. 1 Scott (Jones Co.)	1560	Gas
Tex-Okla Oil Co.'s No. 1 Hall (Brown Co.)	1295	Abandoned
Placid Oil Co.'s No. 1 Fee (McCulloch Co.)		Abandoned
San Angelo Oil Co.'s No. 1 Harris (Tom Green Co.)	2477	Abandoned
Sun Company's No. 1 Arterburn (Parker Co.)	3577	Abandoned
Magnolia Pet. Co.'s No. 6 Morris (Coleman Co.)		Gas

APRIL, 1919

Company and Well	Depth	Remarks
McGee et al's No. 1 Boenecke (Brown Co.)	1200	Gas
Benedum & Trees' No. 1 Rogers (Somerville Co.)	3100	Showing
T. & P. C. & O. Co.'s No. 1 Fulfer (Erath Co.)	3537	Abandoned
Hercules Pet. Co.'s No. 1 Edison (Hamiton Co.)	3600	Show
Partridge Oil Co.'s No. 1 Weedon (Brown Co.)	2660	Dry
Pippin Oil Co.'s No. 1 Andrews (Brown Co.)	2300	Abandoned
Glayds Belle Oil Co.'s No. 1 Campbell (Coleman Co.)	1620	2 M gas
Jim Ned Oil Co.'s No. 1 Dibrell (Coleman Co.)	450	5 M gas
Carter et al's No. 1 Wittenberg (Mills Co.)	1295	Abandoned

MAY, 1919

Company and Well	Depth	Remarks
Texas Eastern Oil Co.'s No. 1 Capps (Brown Co.)	1730	5 Bbls.
Pippin Oil Co.'s No. 1 Scott (Brown Co.)	500	10
Thomas et al's No. 1 Dibrell (Coleman Co.)	3105	Show
Root & Ramsey's No. 1 Shirmacher (Coleman Co.)		15 Bbls.
Burt & Griffith's No. 1 Perry (Parker Co.)	1650	Show
Reese-Allen et al's No. 1 Gilespie (Taylor Co.)	1835	Salt water
Mutual Pet. Co.'s No. 3 Babbington (Coleman Co.)	1365	Abandoned
Root & Ramsey's No. 2 Shirmacher (Coleman Co.)	1525	13 Bbls.
Richardson Oil Co.'s No. 1 Smith (Brown Co.)	1150	Abandoned
Grant & Lamb's No. 1 Enloe (Brown Co.)	1280	Abandoned
Gladys Belle Oil Co.'s No. 1 Russell (Coleman Co.)		20 M gas
Prod. & Ref. Corp's No. 1 Graham (Brown Co.)	3205	Dry
Empire G. & F. Co.'s No. 1 Neff (Coleman Co.)		Abandoned
Cosden O. & G. Co.'s No. 2 Gray (Coleman Co.)	2475	40 Bbls.
Whitesides et al's No. 1 Lane (Palo Pinto Co.)	3305	Show
Empire G. & F. Co.'s No. 4 Edmonson (Palo Pinto Co.)	3155	Show
Gladys Belle Oil Co.'s No. 1 Watson	2020	Gas

JUNE, 1919

Company and Well	Depth	Remarks
Miller et al's No. 1 Stearns (Brown Co.)	750	Show
Sun Company's No. 1 Guthrie (Coleman Co.)	2250	Abandoned
Schultz Oil Co.'s No. 1 Schultz (Concho Co.)	3230	Light show
Empire G. & F. Co.'s No. 2 Reynolds (Shackleford Co.)	1325	2 M gas
S. O. Thomas's No. 1 White (McCulloch Co.)	1805	Abandoned
Comanche Central Oil Co.'s No. 1 Parker (Erath Co.)	3005	Abandoned
Phoenix Oil Co.'s No. 1 Clayton (Erath Co.)		25
System Oil Co.'s No. 1 Miller (Coleman Co.)	2895	Light show
Spellman Oil Co.'s No. 1 Cain (Tom Green Co.)	4320	Dry
Ft. Phantom Oil Co.'s No. 1 Scott (Jones Co.)		Junked
R. E. Lee Oil Co.'s No. 1 Stroud (Coke Co.)	3300	Abandoned
Gladys Belle Oil Co.'s No. 1 Blancitt (Hamilton Co.)	3548	25
Gulf Production Co.'s No. 1 Russell (Runnels Co.)	2625	25

JULY, 1919

Company and Well	Depth	Remarks
Pippin Oil Co.'s No. 1 Smith (Brown Co.)	1920	Dry
Mitchell et al's No. 5 Gray (Coleman Co.)	1955	30
Sun Company's No. 1 Dancie (Coleman Co.)	3330	Abandoned
Gladys Belle Oil Co.'s No. 3 Pope (Coleman Co.)	1515	10
Clarion Oil Co.'s No. 1 Weston	2400	Dry
Texas Hurst Synd.'s No. 1 Baumgartner (McCulloch Co.)	1252	Abandoned
Robertson & Sons' No. 3 Pittman (Coleman Co.)	1080	Abandoned
Gladys Belle Oil Co.'s No. 2 Garrett (Coleman Co.)	1578	20 Bbls.
Texas Company's No. 1 Webb (Shackleford Co.)	1980	
Comanche Chief Oil Co.'s No. 2 Wilson (Erath Co.)	3510	Abandoned
Texas Company's No. 1 Baugh (Brown Co.)	3391	Abandoned
Empire G. & F. Co.'s No. 1 Fuller (Brown Co.)	3707	Abandoned
Liberty O. & G. Co.'s No. 1 Ford (Brown Co.)	1250	Abandoned
Peard et al's No. 1 Cross (Brown Co.)	2804	Abandoned
Texas Company's No. 1 Bowden (Coleman Co.)	765	1 M fas
Dixie Oil Co.'s No. 1 Miller (Hamilton Co.)	3750	Dry

AUGUST, 1919

Company and Well	Depth	Remarks
Texas East Oil Co.'s No. 3 Capps (Brown Co.)	1520	Gas
Stewart Oil Co.'s No. 1 Patterson (Erath Co.)		Abandoned
T. B. Slick's No. 8 Rendelman (Coleman Co.)	1535	Light show
Holliday Oil Co.'s No. 1 Harrison (Parker Co.)	3440	Abandoned
Roxana Pet. Co.'s No. 1 Seaman (Palo Pinto Co.)	4520	Abandoned
Roxana Pet. Co.'s No. 1 Dye (Palo Pinto Co.)	3735	Abandoned
Radium Oil Co.'s No. 1 Decker (Erath Co.)	337	Abandoned
R. A. Young's No. 1 Poston (Hamilton Co.)	3510	Water
Packard Oil Co.'s No. 1 Booth (Nolan Co.)	1665	Gas
Texas Elkhorn Oil Synd.'s No. 1 Richardson (Sterling)	4155	Abandoned
Consumers G. & F. Co.'s No. 1 Owens (Palo Pinto Co.)	2250	Show oil
Levy et al's No. 1 Stroud (Erath Co.)	3650	Abandoned
Thomas & Ludlow's No. 1 Davis (Erath Co.)	3960	Abandoned
Burt & Griffith's No. 1 Laney (Erath Co.)	3750	Abandoned
Comanche Patterson Oil Co.'s No. 1 Shelton (Erath Co.)	3080	Show oil
Sinclair Gulf Oil Co.'s No. 2 Holt (Palo Pinto Co.)	4100	15 M gas
Comanche Chief Oil Co.'s No. 1 Carr (Erath Co.)		Show oil

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INVADER OIL AND REFINING CO.

CAPITAL, $2,000,000

Producers of High Grade Oil in the Famous Fields of KANSAS, OKLAHOMA and TEXAS

ORGANIZATION
Oklahoma Corporation, chartered in February, 1917.

PROPERTIES
Own over 20,000 acres of carefully selected leases in the oil fields of Kansas, Oklahoma and Texas.

PRODUCTION
Have more than 50 producing wells.

DEVELOPMENT
Six additional wells now drilling.

EARNINGS
Paid 32 cash dividends to stockholders in past 2 years.

MANAGEMENT
The Invader Company is under the direct management and supervision of reliable and successful oil men who have had years of actual experience in producing oil and operating oil properties.

B. FRANK WOOD, General Manager

INVADER OIL & REFINING COMPANY

MUSKOGEE, OKLAHOMA

Gulf Coast Wells with an Initial Production of 4000 Bbls. or More

The fields covered, for the period mentioned, in this report are Spindletop, Jennings, Sour Lake, Batson, Saratoga, Humble, Caddo, Vinton, Markham Hoskins Mound, Anse la Butte. Of these, Jennings produced the most of the wells considered. Giving the number of such wells for each field in the same order as the fields are mentioned in this paragraph, they are 2, 47, 2, 12, 6, 39, 8, 6, 1, 0 and 1.

Other fields discovered during the period under consideration, in Texas and Louisiana, are Dayton, Matagorda county, Marion county, Powell, Petrolia, and Corsicana, none of which produced a 4000 barrel well during this time. Welsh in Louisiana, is included in the report on Jennings, though it had no big wells.

The following fields, while some of them have produced very large wells, were only developed after 1910. Of these are Moran, Electra, Burkburnett, Orange County, Duval county, Bexar county and Marion county. Goose Creek was not really operated before 1912. In Louisiana, DeSoto, Red River and Edgerley were all brought in in 1914.

It cannot be claimed for this report that it is absolutely complete. Records for the first few years were fragmentary. Effort has, moreover been made to err, if at all, on the side of conservatism, especially in the matter of the size of wells. It is extremely doubtful, however, that any similar report is as complete.

The record at Spindle Top is especially incomplete. It is known that the Guffey interests completed five wells making more than 5000 barrels a day, that the Hog-Swayne Syndicate completed several big wells, that the American Oil Company completed more than one big well, while other wells were completed with big production.

Efforts to get definite information on these wells have not been especially successful. Many old times remember them and can assert authoritatively that there were a "bunch of good ones," but when tied down to names, do not remember who owned the wells.

In compiling this list we are indebted to the files of several companies having headquarters in Houston, to the files of the Oil Investor's Journal and the Fuel Oil Journal.

Due to the fact that the bulk of this data was gathered several months back, and set in type then, we have found it necessary to throw together the big wells of 1919 which were completed during the period of four months previous to this date of completion.

SPINDLETOP

Date	Company	Well No.	Farm-Lease	Initial Production	
1901	Under supervision of Col. Lucas			50,000	
1901	Heywood Bros.	2		90,000	Probably overestimated
1901	Guffey-Gailey Oil Co.	1	Gladys City Lease	8,000	
	Guffey-Gailey Oil Co.	4	Gladys City Lease	10,000	
	Guffey-Gailey Oil Co.	5	Gladys City Lease	7,000	
	Guffey-Gailey Oil Co.	7	Gladys City Lease	15,000	
	Guffey-Gailey Oil Co.	9	Gladys City Lease	5,000	
1901	Beaumont-Palestine Oil Co.	1		10,000	

JENNINGS

1902	Heywood Bros.	3	Southern	(These wells were considered large, but	
	Heywood Bros.	4	Southern	no definite record of their size was found	
	Heywood Bros.	2	Southern	save that No. 2 was over 4,000 barrels.)	
1903	Crowley O. & M. Co.			5,000	
	Jennings Oil Co.	5	Jennings	10,000	
	Morse Oil Co.	1	Morse	5,000	
1904	Morse Oil Co.	6	Jennings-Heywood	6,400	
	Producers Oil Co.	1	Latrielle	5,000	
	Bass & Benckenstein	1		8,000	
	Morse Oil Co.	7	Morse	7 and 8 together had initial	
	Morse Oil Co.	8		production of 8,000 barrels	
	Heywood Oil Co.	1		10,000	Estimated
	Bass & Benckenstein	2		5,000	
	Heywood Oil Co.	2		7,000	
	Wilkins Co.	2		15,000	
	Sharp Bros.	1	Home Oil Co. Sblse	7,000	
	Lovegrove & McIntosh	1		7,000	
	Shultze-Congleton	1		8,000	
	Wilkins Co.	1		5,000	
1905	Moonshine Co.	1		4,000	
	Crowley O. & M. Co.	11		4,000	
	Teter Co.	1		4,000	
	Carnes, Bass, Benckenst'n	1		5,000	
	Carnes, Bass, Benckenst'n	6		2,000 to 6,000	
	Moonshine Co.	5	Home Half Acre	7,000	
	J. B. Tierde	1		6,000	
	J. B. Tierde	4		6,000	
	Rex Oil Co. (Flynn et al)	1	Latreille 40 acres	7,000	
	Wilkins Co.	2		7,000	Quit flowing 1-1-06 produced over 2½ million
	Heywood Oil Co.	4		8,000	Quit flg. Dec., '05; produced over 1 million
	Carnes, Bass, Benckenst'n	6		2,000 to 6,000	
	West. Va. Oil Co.	2		4,000	
1906	Heywood Oil Co.	1	Crowley Co. Farm	8,000	
	Heywood Oil Co.	7		7,000	

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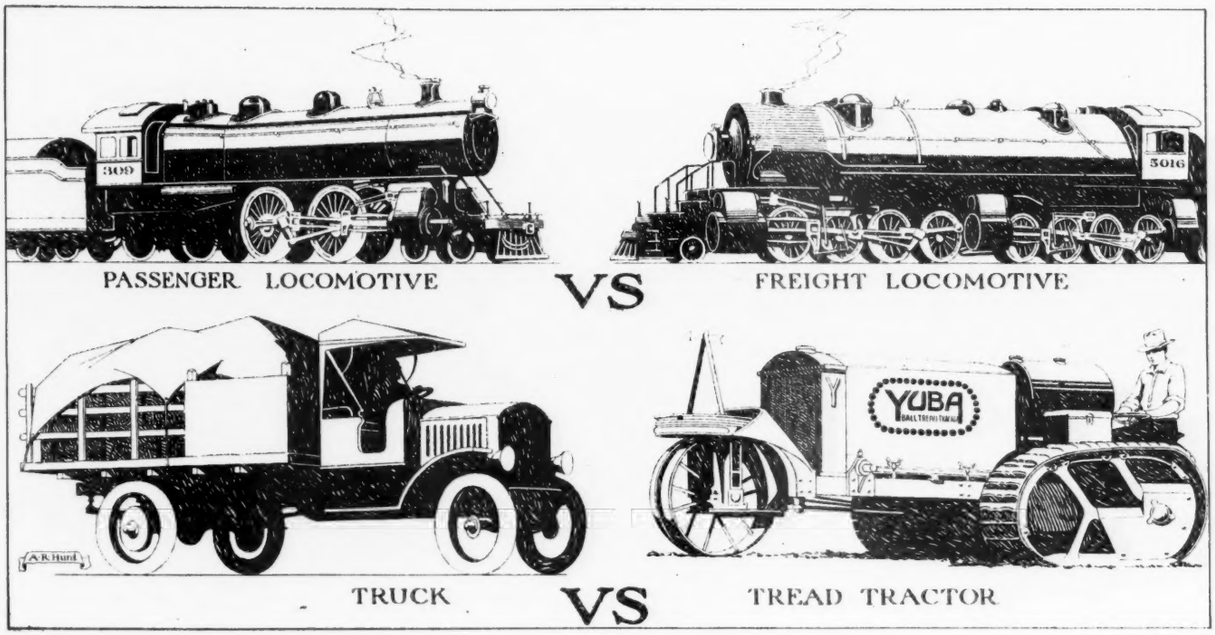

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Why? Isn't it heavy enough and powerful enough?

Yes, but power is useless without traction. In the passenger locomotive, traction has been sacrificed to speed. For heavy loads and slow speed, freight locomotives are provided.

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And so it is in oil field work—the Yuba BALL TREAD Tractor has all the best of it, possessing traction where a wheel machine would falter—steady power where a truck would fail, a willing eagerness for the stiffest pull in the sand and mud holes—that's the Yuba.

Two Models—To do 12 horses' work—The 12-20

To do 20 horses' work—The 20-35

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YUBA MANUFACTURING COMPANY MARYSVILLE, CALIFORNIA

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Date	Company	Well No.	Farm-Lease	Initial Production	Remarks
	Producers Oil Co.	4	Clement Farm	5,000	1500 end of 2 wks.
	Wilkins Oil Co.	5		5,000	
	Jennings-Heywood Synd.	3	Crowley	6,000	
	Producers Oil Co.	5		6,500	
	Jennings-Heywood	12		5,000	Developed salt water.
1908—	Producers Oil Co.	40	Latreille 40 acres	4,000	
	Jennings-Heywood	54	Fee	4,500	
	Producers Oil Co.	41	Latreille	4,800	
	Producers Oil Co.	18		4,800	Initial flw 3000 bbls
	Producers Oil Co.	43	Latreille	5,000	
	Producers Oil Co.	21	Latreille	4,000	
	SOUR LAKE				
1903—	Sour Lake Co.	2		7,000	
	Roche Well			10,000	
1903—	Walter B. Sharp	1	Wirt Davis	10,000	Later est. 5,000
	Gilbert Co.	1	Gilbert	14,000	Later est. 5,000
1913—	The Texas Co.	196	Texas farm	6,000	
1914—	Producers Oil Co.	228	Sour Lake Springs	7,400	
	Yount-Rothwell	4	Jackson-Merchant	5,000	2275 feet
	Merrimac Oil Co. (Blaffer & Farish)	1	Jackson	5,000	2373 feet
	Producers Oil Co.	234	Sour Lake Springs	5,000	2395 feet
	Lake Oil Co.	3	Bashers	5,000	
	Lake-Graham Oil Co.	2	Jackson	7,000	
	Lake Oil Co.	1	Hebert	4,000	
	Lake Oil Co.	5	Bashara	4,000	
1917—	Humble-Gulf	15	Hardin County	15,000	
1918—	Yount-Lee Oil Co.	6	Martin	4,000	
	Yount-Lee Oil Co.	6	Merchant	12,000	
	BATSON				
1903—	Paraffine Oil Co.	2		5,000	1150 feet
	Paraffine Oil Co.	3		15,000	Estimated
1904—	Guffey Pet. Co.	1	Riley	18,000	
	Prairie Oil & Gas Co.		Brill	12,000	Salt water less than one month
	Prairie Oil & Gas Co.			8,000	
	Britten Well			4,500	
	Guffey Pet. Co.	3	wells	15,000	Altogether
	Guffey Pet. Co.	2	wells	10,000	Altogether
	Huntington Oil Co.	1		5,000	
	Margaret Helen Oil Co.		Paraffine	13,000	
1904—	Texas Company	1	Moonshine	28,000	
	Guffey Pet. Co.	26	Wing Farm	6,000	
	SARATOGA				
1904—	Producers Oil Co.	84		10,000	
1905—	Guffey Pet. Co.	2	Hal Greer	6,000	
	Guffey Pet. Co.	1	B. B. B. & C. tract (Paul well)	4,500	
	Santa Fe R. R. Co.	1	Herrington	5,000	
	Santa Fe R. R. Co.	1	B	7,800	Dropped immediately to 400 bbls.
1906—	Guffey Pet. Co.	5	B. B. B. & C. tract	8,000	Put on pump in 2 days after
1918—	Austin Oil Co.	1	Moore	12,000	Worked over
	Texas Company	1	Nancy Fuller	8,000	
	DAMON'S MOUND				
1917—	Texas Exploration Co.	3	Bryan	10,000	
	Texas Exploration Co.	1	Bryan	6,000	
	HUMBLE				
1905—	Beatty	1		8,000	First big gusher in this field
	Paraffine Oil Co.	1		8,100	
	Moonshine Co.	11		4,300	
	Beatty	2		6,200	
	Moonshine Co.	9		9,300	
	Texas-Kentucky Co.	1		5,800	
	Beatty	3		4,400	
	Beatty	4		9,800	
	Coleman-Williams O. Co.	1	Wood & Fondren Cherry Half Acre	5,200	
	House & Beatty	1		4,100	
	Higgins O. & F. Co.	5		6,000	
	Commonwealth Oil Co.		Cherry Subdivision	7,000	
	House & Beatty	3	Acre 19, Long	7,000	
	Batson Oil Co. (Brice & Bradley)	1	Acre 36, Long	10,000	
	Edgar	1	Acre 13, Long	6,000	
	Higgins O. & F. Co.	1	Cherry 7	5,000	
	Heywood Oil Co.	1	Cherry, lot 4	4,000	

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Date	Company	Well No.	Farm-Lease	Initial Production	Remarks
	Tenderfoot Co.	1	Acre 36, Long	5,500	
	Murphy Bros.	1	Cherry	4,000	
	Commonwealth Oil Co.	2	Cherry	6,000	
	Enterprise Co.	2	Long	7,000	
	E. F. Simms	1	Cherry	4,000	
	Tenderfoot Co.	2	Long	8,000	
	L. M. Hoge	1	De Merritt	6,000	
	House & Beatty	6	Cherry, Lot 11, Blk. 3	9,000	to-
	House & Beatty	7	Cherry, Lot 8, Blk. 4	11,600	gether
1905—Guffey Pet. Co.		2	Pump Station, 6 acres	4,000	
	E. F. Simms	2	Cherry, Blk. 2, strip 19	17,000	
	Moonshine Co.	24	Cherry	14,000	
	Landslide Co.		Cherry	8,000	
	E. F. Simms	29	Moonshine		Over 4,000 barrels
	R. E. Brooks et al	1		6,000	
	R. E. Brooks et al	2		4,000	
	L. M. Hoge	1	Barrett	8,000	
	Heywood Oil Co.	1	Wood	4,300	
	Swayne & Edwards	1	Cherry, Lot 13, Blk. 2	4,300	
	Brooks & Sheik	1	Brooks 10 acres	4,000	
	Moonshine Driller Cos.	1	Dunman	4,000	
1913—Producers Oil Co.		11	Carroll	10,000	
	Producers Oil Co.	10	Carroll	5,000	
1914—Producers Oil Co.		14	Carroll	7,500	
	Producers Oil Co.	15	Carroll	4,500	
1915—Farmers Pet. Co.		4	Stevensen	12,000	3150-3200-foot sand
	Producers Oil Co.	4	Burt	5,000	
	Producers Oil Co.	4	Stevensen	11,500	3200-3250-foot sand
	Farmers Pet. Co.	5	Stevensen	8,000	
	Producers Oil Co.	8	Stevensen	8,000	
	Producers Oil Co.	182	Landslide	7,000	
	Farmers Pet. Co.	10	Stevensen	9,000	
	Farmers Pet. Co.	12	Stevensen	7,000	
	Farmers Pet. Co.	13	Stevensen	4,500	
	Farmers Pet. Co.	14	Stevensen	12,000	
1915—Producers Oil Co.		11	Stevensen	11,500	
	Producers Oil Co.	184	Landslide	12,300	
	Farmers Pet. Co.	15	Stevensen	10,000	
	Farmers Pet. Co.	16	Stevensen	24,000	
	Farmers Pet. Co.	17	Stevensen	5,000	
	Producers Oil Co.	185	Landslide	14,000	
	Producers Oil Co.	13	Stevensen	11,000	
	Producers Oil Co.	17	Stevensen	17,000	
	Producers Oil Co.	18	Stevensen	15,000	
	Farmers Pet. Co.	18	Stevensen	6,000	
	Farmers Pet. Co.	19	Stevensen	12,000	
	Farmers Pet. Co.	20	Stevensen	8,000	
	Gulf Prod. Co. (Blaffer & Farish)	4	Paraffine	6,000	
	J. B. Cicero-Wheeler	1	Lockert Subdivision	10,000	
1916—Producers Oil Co.		20	Stevensen	5,000	
	Producers Oil Co.	21	Stevensen	7,000	
	Producers Oil Co.	22	Stevensen	6,000	
	Farmers Pet. Co.	1	Wheeler-Pickens	5,000	
	Producers Oil Co.	25	Stevensen	6,000	This well burned out
	Producers Oil Co.	192	Landslide	4,000	
	Producers Oil Co.	24	Stevensen	5,500	
	Producers Oil Co.	18	C. O. & G.	4,000	
	Farmers Pet. Co.	27	Stevensen	4,000	
	Farmers Pet. Co.	25	Stevensen	9,000	
	Producers Oil Co.	29	Stevensen	4,000	
1916—Gulf Prod. Co. (Blaffer & Farish)		9	Paraffine	7,000	
	Republic Prod. Co.	28	Stevensen	8,000	
	Republic Prod. Co.	1	Rock	4,000	
	Producers Oil Co.	206	Landslide	6,000	
	Producers Oil Co.	19	C. O. & G.	9,000	
1917—Invincible Oil Co.		51	Hermann	4,000	
	The Texas Co.	14	Stevensen	4,000	
1918—The Texas Co.		225	Landslide	8,000	
	The Texas Co.	223	Landslide	4,000	
	The Texas Co.	230	Landslide	6,000	
	The Texas Co.	187	Landslide	7,000	Worked over well
	The Texas Co.	25	Koehler	4,000	at 3200 feet
1919—Texas Company		25	Koehler	4,000	3200 feet
			VINTON		
1910—Gulf Refining Co.		1	Gardiner-Gray	5,000	Gvty. 19.5 Beaume.
1911—Gulf Refining Co.		2	Gardiner-Gray	5,000	
	Vinton Pet. Co.	3		5,000	
	Stewart Oil Co.		Section 34-12-12	7,500	
	Wilson-Tucker	1		5,000	
	Vinton Pet. Co.	1		4,000	
	Gulf Refining Co.	1	Vincent	5,000	
	Gulf Refining Co.	2	Vincent	5,000	
	Producers Oil Co.	1	Gray	10,000	

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1911—Gulf Refining Co.	3	Vincent	4,000		
Gulf Refining Co.	4	Gardiner-Gray-Noble	4,500		
Gulf Refining Co.	3	Gardiner-Gray-Noble	4,500		
Gulf Refining Co.	4	Vincent	6,500		
Gulf Refining Co.	5	Gardiner-Gray-Noble	8,000		
Vinton Pet. Co.	12	Gray	5,500		
Vinton Pet. Co.	13	Gray	4,500		
1913—Gulf Refining Co.	10	Vincent	13,000		
Gulf Refining Co.	4	Star-Vincent	13,000		
Producers Oil Co.	4	Vincent	4,000		
Crowley O. & M. Co.	19		4,000	1500 less than 1 mo	
Heywood Oil Co.	5	Arnaudet	4,000	For 4 days	
Jennings-Heywood	15		5,000	Dead in few days	
1914—Vinton Pet. Co.	24	Gray	5,000		
Vinton Pet. Co.	25	Gray	6,000	3165 feet	
Rescue Oil Co.	2	Hocks	12,000		
1916—Gulf Refining Co.	26	Gardiner-Gray-Noble	10,000		
Gulf Refining Co.	19	Vincent	12,000	50 per cent water	
Vinton Pet. Co. (Gum Cove Oil Co.)	1	Lucky 4-acre tract	9,000	30 per cent water	
Gulf Refining Co.	29	Gardiner-Gray-Noble	7,000		
1918—Gum Cove Oil Co.	4	Lucky 4-acre tract	7,000	2600 feet	

MARKHAM

1910—Producers Oil Co.	1	Clem	7,000	
Clem Oil Co.	1	Myers	15,000	(Flowed one day and sanded up.)
Paystreak Oil Co.	12	Hardy-Smith	5,000	
Hardy Oil Co.	24	Smith	4,000	(Wild for 20 days and sanded up.)

ANSE LA BUTTE

1908—Lake Oil Co.	10	Martin	4,500	

GOOSE CREEK

1917—Gulf Production Co.	4	Praether	12,000	
Gulf Production Co.	2	Rucker-Schilling	4,000	
West Va. Oil Co.	2	Dolan	6,000	
Simms-Sinclair	5	Gaillard	10,000	
Sinclair Gulf Oil Co.	3	Schilling	8,000	
Humble Oil Co.	2	Gaillard 5½ acres	5,000	
Gulf Production Co.	4	Stateland	12,000	
Gulf Production Co.	7	Houston Smith	4,000	
Simms-Sinclair	11	Sweet	35,000	
Humble Oil & Ref. Co.	12	A. Smith	4,000	
Humble Oil & Ref. Co.	1	Beaumont Petroleum	8,000	
Humble Oil & Ref. Co.	21	Gaillard	6,500	
Gulf Production Co.	14	A. Wright	7,500	
1918—Humble Oil & Ref. Co.	24	Gaillard	5,000	
Humble Oil & Ref. Co.	25	Gaillard	6,000	
Gulf Production Co.	4	C. Gaillard	5,000	
Gulf Coast Oil Corp. (Crown O. & R. Co.)	18	Gaillard	5,000	
E. F. Simms & Co.	16	Sweet	5,000	
Gulf Coast-Crown	20	Gaillard	7,000	
Humble Oil & Ref. Co.	4	Gaillard	10,500	
1919—Goose Creek Oil Corp.	1	Freeman-Stateland	8,000	3400 feet

WEST COLUMBIA

1918—Humble Oil & Ref. Co.	1	Giraud	7,000	3030 feet
1919—The Texas Company	2	Arnold	10,000	3050 feet
Crown O. & R. Co.	1	Olschewski	6,000	3000 feet
Crown O. & R. Co.	1	Marmion	5,000	3000 feet
Humble Oil & Ref. Co.	2	Giraud	6,000	3050 feet
Humble Oil & Ref. Co.	2	Marmion	5,000	3000 feet
Gulf Production Co.	2	Ayers	4,000	2900 feet
The Texas Co.	16	Hogg	4,000	3030 feet
Humble Oil & Ref. Co.	5	Japhet	5,000	2900 feet
Humble Oil & Ref. Co.	1	Giraud	7,000	3030 feet
Texas Company	2	Arnold	10,000	3050 feet
Crown Oil & Ref. Co.	1	Olschewski	6,000	3000 feet
Crown Oil & Ref. Co.	1	Marmion	5,000	3000 feet
Humble Oil & Ref. Co.	2	Giraud	6,000	3050 feet
Humble Oil & Ref. Co.	2	Marmion	5,000	3000 feet
Gulf Production Co.	2	Ayers	4,000	2900 feet
Texas Company	16	Hogg	4,000	3030 feet
Humble Oil & Ref. Co.	5	Japhet	5,000	2900 feet
Texas Company	24	Hogg	4,000	3030 feet
Humble Oil & Ref. Co.	8	Japhet	8,000	3100 feet

HULL

1919—Republic Prod. Co.	17	Dolbear	5,000	2650 feet
The Texas Co.	1	Palmer	5,000	1940 feet
Big Four Oil Co.	4	Hankamer	7,000	1525 feet
Republic Prod. Co.	17	Dolbear	5,000	2650 feet
Republic Prod. Co.	21	Dolbear	4,500	2246 feet
Big Four Oil Co.	4	Hankamer	7,000	1525 feet
Texas Company	1	Palmer	5,000	1940 feet

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HUMBLE

Company—	No.	Well—	Depth.	Bbls.
Texas Company	25	Koehler	3,200	4,000

WEST COLUMBIA

The Humble O. & R. Co.	1	Giraud	3,030	7,000
The Texas Co.	2	Arnold	3,050	10,000
The Crown O. & R. Co.	1	Olschewski	3,000	6,000
The Crown O. & R. Co.	1	Marmion	3,000	5,000
Humble Oil & Ref. Co...	2	Giraud	3,050	6,000
Humble Oil & Ref. Co...	2	Marmion	3,000	5,000
The Gulf Prod. Co.....	2	Ayers	2,900	4,000
The Texas Co.....	16	Hogg	3,030	4,000
Humble Oil & Ref. Co.	5	Japhet	2,900	5,000
The Texas Co.....	24	Hogg	3,030	4,000
Humble Oil & Ref. Co.	8	Japhet	3,100	8,000

HULL

The Republic Prod. Co...	17	Dolbear	2,650	5,000
The Republic Prod. Co...	21	Dolbear	2,246	4,500
The Big Four Oil Co....	4	Hankamer	1,525	7,000
The Texas Co.....	1	Palmer	1,940	5,000

STEPHENS COUNTY

1919—Swensondale Oil	1	P. Swenson	5752	
Mid-Kansas O. & G. Co..	2	J. S. Knott	6,000	

EASTLAND COUNTY

1918—Prairie Oil & Gas Co.....	1	Emma Terrell	9,000
1919—Magnolia Pet. Co.....	1	T. W. Connellee	5,000
John Markham	1	K. Roper	5,500
Prairie Oil & Gas Co...:	5	S. F. Copeland	6,000
John Markham	2	J. E. Rust	4,500
Sun Company	3	J. K. Butler	5,500
T. & P. Coal & Oil Co...	2	A. M. Harrison	4,000
Dorsey et al	1	Boyd	5,600
Texas Company	1	E. Perkins	4,200
Root, Huff & Duff.....	1	Turner	7,000
Albers Oil Co.			4,000

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First Gurgle—Did you notice that good looking fellow who sat right back of us at the Orpheum?

Second Gurgle—Oh, the handsome chap with the red necktie and tan suit, and wore his hair pompadour? No, why?—Nebraska Awgwan.

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Deep and Shallow Sands More Productive Than Any One Expected

DEVELOPMENT in the North Louisiana field for the last three months of 1918, commencing October first, was handicapped by a number of factors of which not the least important was the effect of the war upon the labor supply and of the various controlling bodies organized by the government for conservation influences. While not as serious in its effect as the scarcity of labor and material, the "flu" epidemic was responsible for an almost complete cessation of activities for almost a month, divided between November and December. Far from the least of the undesirable influences was the action of the pipe line companies in refusing to handle the output of the producing areas, which unquestionably resulted in a very decided diminution of investment and development efforts.

Action of the pipe line companies went so far as to completely refuse to handle any part of the production of wells completed later than the issuance of the cancellation orders for fuel oil due to cessation of war activities. Physical deterioration of the properties resulting from the shutting down of the wells, not to speak of the loss of revenue involved, naturally resulted in a feeling of the most intense dissatisfaction on the part of the independent producers, which culminated early in December in the organization at Shreveport of the Independent Oil and Gas Producers Association of North Louisiana, of which D. C. Richardson was elected president of the board of directors. At this time the situation had reached a climax, inasmuch as the pipe line companies had served notice that further acceptance of independent production would cease entirely as soon as existing storage facilities were filled; and it was further pointedly advised that drilling operations be discontinued and production curtailed decidedly.

Lines Waited for Normal Conditions

An aggressive communication was presented to the pipe line companies as the result of a meeting of the association, in which it was stated that an obligation existed on the part of the companies to care for the production and that every means would be used on the part of the association to secure what was believed to be a just and proper solution of difficulties in which so many were involved by the order. Efforts made through other organizations and on the part of committees who made appeals to various officials and boards at Washington, actually accomplished nothing tangible, and production was not accepted without restriction until, as indicated by the pipe line companies, demand had re-established normal conditions and an outlet provided for the oil.

Transportation and market problems have been the greatest confronted in this as in every other field, and while the belief is general here that they contain nothing too formidable to be overcome, sufficient cohesion of interest cannot seemingly be secured to accomplish the desired result.

Some curtailment of production was accomplished through the action of the pipe line companies, assisted to some extent by the larger independent producers. No other facilities being available, production was taken care of by a large number of the smaller producers through the use of earth storage reservoirs, which was felt to be advisable rather than run the risk of damaging wells by shutting them down.

These conditions only affect the production in the Pine Island district, the output of which was entirely heavy oil, and it was largely due to the almost complete paralysis of the industry in the Pine Island field, which at that time constituted most of the drilling activity, that efforts were made to open up production of higher gravity. This was accomplished almost simultaneously in the Bull Bayou and Claiborne fields.

Discovery Well at Bull Bayou

The discovery well in the Bull Bayou district was completed in December, 1918, the Bull Bayou Oil Company's first test on the Armistead lease, in Section 23-12-11, coming in with an initial production of 250 barrels. Since that date the pool has witnessed a succession of producers which have totaled an initial daily production of approximately 25,000 barrels.

Most important of recent developments in the Bull Bayou pool were completions made during the past few weeks, not only because of their value from the standpoint of production, but because they also opened up new territory and territory that had practically been condemned as unproductive when attempts were made about two years ago to extend the Crichton pool in the Red River field further south. These wells were brought in early in September, and are the Gulf Refining Company's Gray-Hook No. 1 in Section 5-12-10, which had an initial production of 1800 barrels, and the W. G. Strange Oil & Refining Company's Nelson wells, which have a combined production from Nos. 1, 2 and 3 of approximately 9000 barrels. Only an estimate can be made of the actual production of this pool, as there are not sufficient pipe line facilities to take care of the entire output. Improvements are being made along this line as rapidly as possible, and all the oil will probably be taken within the next few weeks.

Development of the Claiborne field followed closely after that of the Bull Bayou, the first producer being Shaw No. 1 of the Consolidated Progressive Oil Company, which was completed January 14, 1919, in Section 30-21-7, with an initial production of 2500 barrels at 1411 feet. The well was improperly handled, however, and salt water was permitted not only to practically ruin the well but seriously threatened other operations in the field. No further production was accomplished in this field until May, when three wells were brought in in the same section, flowing from 150 to 350 barrels. These stimulated more active development work, and from that time on hardly a week passed without completion of two or more wells in the shallow sand.

Big Well Completed in August

The Standard Oil Company, however, had a test under way with a view to exploration of the deeper levels, and on August 8 brought in their Oakes No. 2, which attracted universal attention to the possibilities of this field with a production which

CADDO LAKE, IN LOUISIANA, SHOWING THE DERRICKS IN THE DISTANCE

can best be estimated from the fact that weeks after it was choked to a three-eighths pipe it gave a consistent yield of 1700 barrels daily, while tests given to the limit of the capacity of the storage facilities for short periods have shown a flow of approximately 23,000 barrels.

The Standard well stimulated further tests for production at the deeper level, and just a month after the Oakes No. 2 was brought in, the Rowe Company, which had completed an unsuccessful test at over 3300 feet in the same section, brought in their Shaw No. 3, Section 30-21-7, at 2046 feet, which, choked to three-eighths, flows 1180 barrels a day. This well at the time the Standard well was completed was practically given up as unsuccessful at the 1400 foot level, though some oil was in evidence at that depth; but the extraordinary success of deeper exploration by the Standard Company encouraged further tests with almost equally satisfactory results.

Great activity in practical development work, as well as in leasing and organization of capital for exploration of their field, immediately followed the Rowe completion, and every facility of travel to and entertainment in the little town of Homer was overflowed. Hotel accommodations at Shreveport were crowded to their utmost capacity, and travelers coming there reported that railroad accommodations, especially Pullman berths, were entirely inadequate to supply the demand.

Sensation for Shallow Sand

The importance of the field was still further demonstrated within a week of the Rowe gusher by the completion of another in the shallow sand by the Louisiana Oil & Refining Company. This well, known as the Jackson No. 1, was brought in September 12 at 1235 feet, and is said by many to establish a world's record for quality and quantity at a shallow level, as it is estimated to have a capacity of 10,000 barrels of high gravity oil.

Reasonably conservative estimates now place the flush production of this pool at around 40,000 barrels per day, and if present interest and activity furnish an accurate criterion by which to judge its future, the Claiborne district may be looked to for an extraordinary development during the coming months.

Activities in the Caddo district were at their height at the beginning of the period covered by this review, and have been reduced through several elements which have contributed to that end. Discrimination against the Pine Island production by the pipe line companies was not the least important of these factors, and the low price obtained for the heavier oil greatly deterred exploration in that portion of the district where heavy oil had been found. As a result completions have gradually decreased in number, and found their low mark in September. This field has been noted for the consistency with which its wells maintained their production, and pipe line runs, though considerably less than the maximum for the heavy oil, show a very consistent production of the light oil to have been maintained for the entire year.

Little Extension to Caddo Field

Very little has been accomplished in the way of increasing the size of developed area in the Caddo district, though in June a small pumper was brought in that promised important possibilities. This was the Kinnebrew et al well on the Dillon land, in Section 20-19-14, which though its production was only four or five barrels, was interesting on account of the high gravity of the oil, it having tested above 45 degrees. Further exploration of the immediate vicinity followed, and some of it is still under way, but has so far resulted in nothing of sufficient importance to secure notice. Extreme western limits of this district are marked by another small well in Section 17-20-16, close to the Texas line, which was completed in September by the St. Paul Oil & Gas Company, and known as No. 1 Rives.

Gas production, which had been an important asset of the Caddo district, has shown a considerable decline during the past year, though 29 gassers were completed during that period, the last of importance in July with nine million feet.

Prospecting has been carried on in over a dozen counties in Eastern Texas, and drilling operations are now under way in Marion, Cass, Panola, Harrison, Shelby, Red River, Rusk, Lamar, Delta, Fannin and Bowie Counties. No successful oil completions have been reported, however, except from Shelby County, where a small well was brought in in April by the Texas Company, and another in August by the same company, on the Pickering land. The latter was opened up recently for an hour, and made a head of 150 barrels. Another well has reached a depth of nearly 3000 feet on the same lease, and still presents encouraging prospects for those interests.

Four counties in Arkansas contiguous to the North Louisiana field have actively started development work, and in Union and Ouachita drilling of a number of wells has been started. None, however, has been completed, though the work is being watched with more than usual interest accorded wildcat operations, due to recent successes in the closely adjacent Claiborne field.

Summary of Operations for Year Ending September 30, 1919

Districts—	Completions	Producers	Initial Production in bbls.	Failures	Gas
Caddo	440	343	83,612	70	27
Claiborne	70	57	40,815	12	1
De Soto	23	16	5,390	6	1
Red River	55	48	28,736	3	4
Bossier	24	5	415	5	14
Texas	15	5	115	9	1
Miscellaneous	42	1	200	19	22
Totals	669	475	159,283	124	70

Major gas production has been confined principally to Bossier Parish, where a number of wells have been completed giving a production of over thirty million cubic feet each, as well as numerous smaller gassers. There is a developed gas area fifty miles square in Union, Ouachita and Morehouse Parishes, but it has not been pushed for production as there is too little outlet, its use being confined to carbon production and to a slight extent only, by communities adjacent. Bossier Parish production is readily marketable, and therefore that territory has been the scene of greater efforts toward development.

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Texas Has Near 5000 Miles Pipe Line

Combined Capacity Around One Million Barrels a Day

Close to 5000 miles of pipe lines, ranging from 4-inch to 8-inch, are now operating in the State of Texas, with a combined capacity of running slightly better than 1,000,000 barrels of crude oil each day of 24 hours. At several fields small 2-inch lines are operated for gathering purposes or to supply crude to refineries from the field, and these small lines are not listed.

In Central West Texas slightly more than 2800 miles of lines are being operated, although three of the lines included in this list continue to coastal points. The combined lines mentioned have a capacity of handling around 3000,000 barrels a day.

In the North Texas section, which includes the Burkburnett, Electra and Iowa Park fields, the pipe line mileage is around 930 miles, with a daily combined capacity of moving about 200,000 barrels. The lines in the North Texas section will have been greatly increased by the end of the year, as a number of new lines are now building.

In the coastal section of the state, more than 1000 miles of lines are in operation, with a combined capacity of more than 500,000 barrels daily. If the larger lines having their origin in North Texas and at the state line were included, the showing would be greater.

Estimates for the figures used are reached by allowing an 8-inch line a daily capacity for handling 20,000 barrels, 12,000 barrels for a 6-inch line, and 7,000 barrels for a 4-inch line. Some lines will run more than the amounts estimated when pumping stations are closer together and more powerful; while many of the lines will run less on account of the pumping stations.

NORTH TEXAS PIPE LINES

At this time the pipe lines operating in the Wichita Falls district, including the fields at Burkburnett, Electra and Iowa Park, have a capacity for handling close to 200,000 barrels of crude oil a day, if the railroad facilities were sufficient to move the tank cars from the loading racks as fast as the cars were filled. By January 1 the pipe line capacity for the district will be close to 300,000 barrels a day, and it is expected that before that time, probably within thirty days, the production for the district can easily be moved.

According to the figures compiled by The OIL WEEKLY, in a short time a total of 1088 miles of pipe line, ranging from 4 to 8-inch lines, will be operating out of the district, most of them having their terminals in the Burkburnett or Northwest Burkburnett fields. The various loading racks at Burkburnett, Wichita Falls, Iowa Park, Electra and points across Red River from the Northwest Burkburnett field have a combined capacity for handling close to 1000 tank cars a day, if this number could be moved by the railroads. Sidetracks at the loading racks have space for this number of cars, and they could be loaded if they could be moved.

In the list accompanying this article several lines are mentioned which are now building and would have been completed more than a month ago had there been no shortage of labor and material. The Texas and Empire combined forces to complete one 8-inch line into Northwest Burkburnett field from Healdton, Okla., and the first oil was run through this combination line last week. Both companies will complete their own 8-inch lines into the field before the end of the year.

A large number of storage tanks ranging from the smaller ones to the large 55,000 barrel steel tanks are being erected just as fast as material can be secured and labor can put them up. The construction work has been very slow since labor is scarce and the material has been slow in arriving. Practically all of the lines mentioned have been built since last October, at that time only the Texas Company and Magnolia Petroleum Company having lines into the field. No attempt has been made to list all of the gathering systems operating in Burkburnett, where they gather the oil and transport a short distance to the loading racks at Burkburnett on the Katy railroad.

Following is the list of pipe lines serving the Burkburnett fields, some of them now being constructed:

Texas Pipe Line Company—390 miles,; capacity, 50,000 barrels; 6-inch line from Burkburnett through Electra to North Dallas; combination 6-8-inch line from Burkburnett to North Dallas; 8-inch line from Wichita Falls to Burkburnett; 8-inch line from Healdton, Okla., to Northwest Burkburnett, nearing completion.

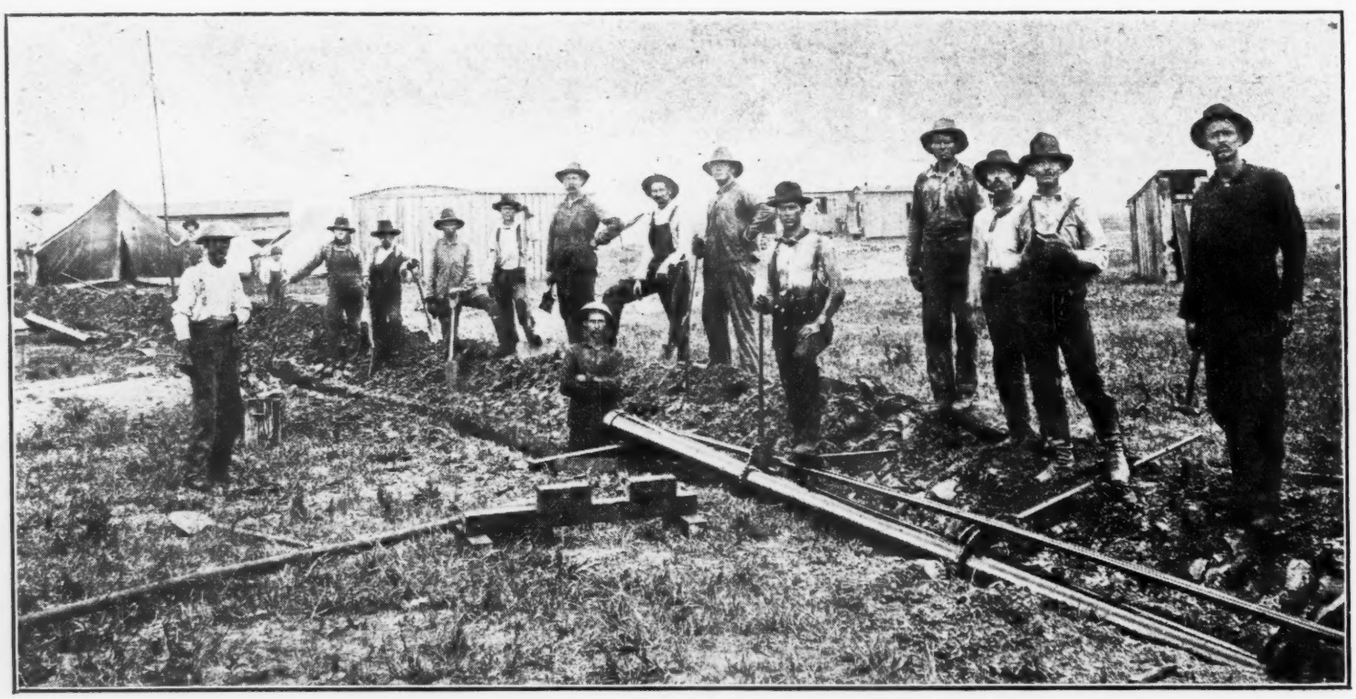
Magnolia Petroleum Company—140 miles; capacity, 20,000 barrels; 8-inch line from Burkburnett to Fort Worth; 6-inch line from Burkburnett to Electra; 6-inch line from Northwest Burkburnett to Burkburnett.

Gulf Production Company—115 miles; capacity, 12,000 barrels; 6-inch line near completion from Burkburnett to Fort Worth; gathering systems in Burkburnett and Northwest Burkburnett; loading racks and storage.

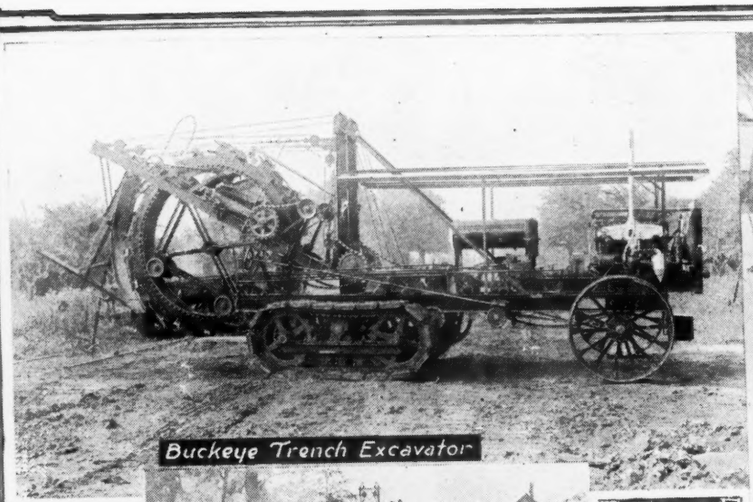
Sinclair Gulf Oil Corporation—60 miles; capacity, 20,000 barrels; 8-inch line from Healdton, Okla., to Burkburnett, nearing completion.

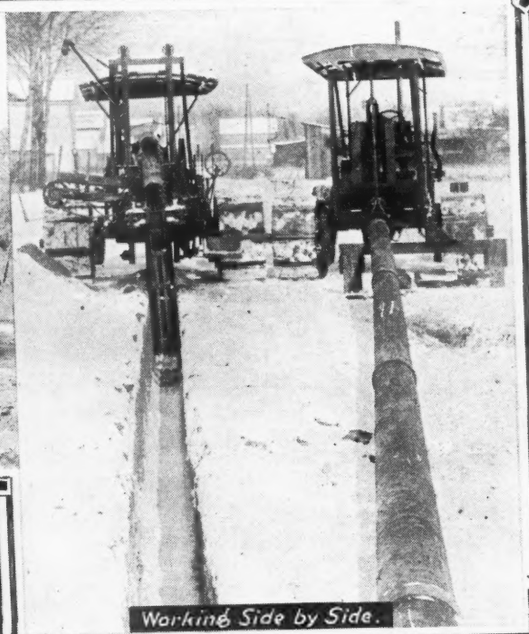
Humble Pipe Line Company—33 miles; capacity, 10,000 barrels; 4-inch line from Burkburnett and Northwest Burkburnett to Iowa Park; part of line doubled, with gathering systems and storage.

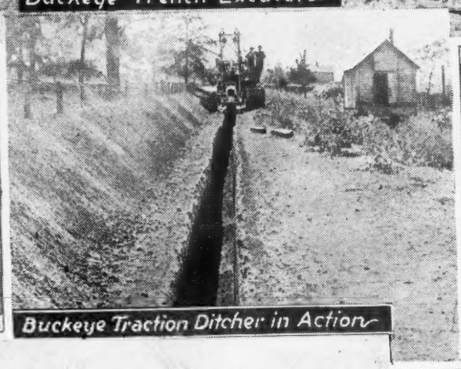
T. & B. Pipe Line Company—20 miles;

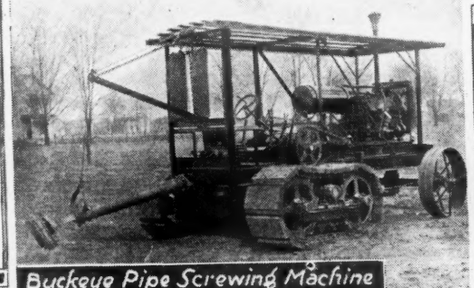


LAYING A FIELD LINE IN THE EARLY DAYS AT HUMBLE. NOTE THE KIND OF TONGS IN USE.


Buckeye Trench Excavator


Working Side by Side.


Buckeye Traction Ditcher in Action


Buckeye Pipe Screwing Machine

Buckeye Pipe Screwing Machine in Action

Labor Savers for Pipe Line Companies

These machines are solving the acute labor shortage for many Pipe Line Companies and Contractors. As the superintendent of a Pipe Line Company says: "A machine that does the work of fifty men."

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Tractor Ditchers and Pipe Screwing Machines

Are Built to Stand the Wear for Which They Are Intended
The following is the report of a day's work on one of these machines:

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Gentlemen: Thinking that the following data, which was given by our machine operator, would be of interest to you, we quote the following:

8400 feet of 16x30 inch ditch in 24 hours.
Character of soil: gumbo.
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A smooth ditch and a neat, even pile of excavation.
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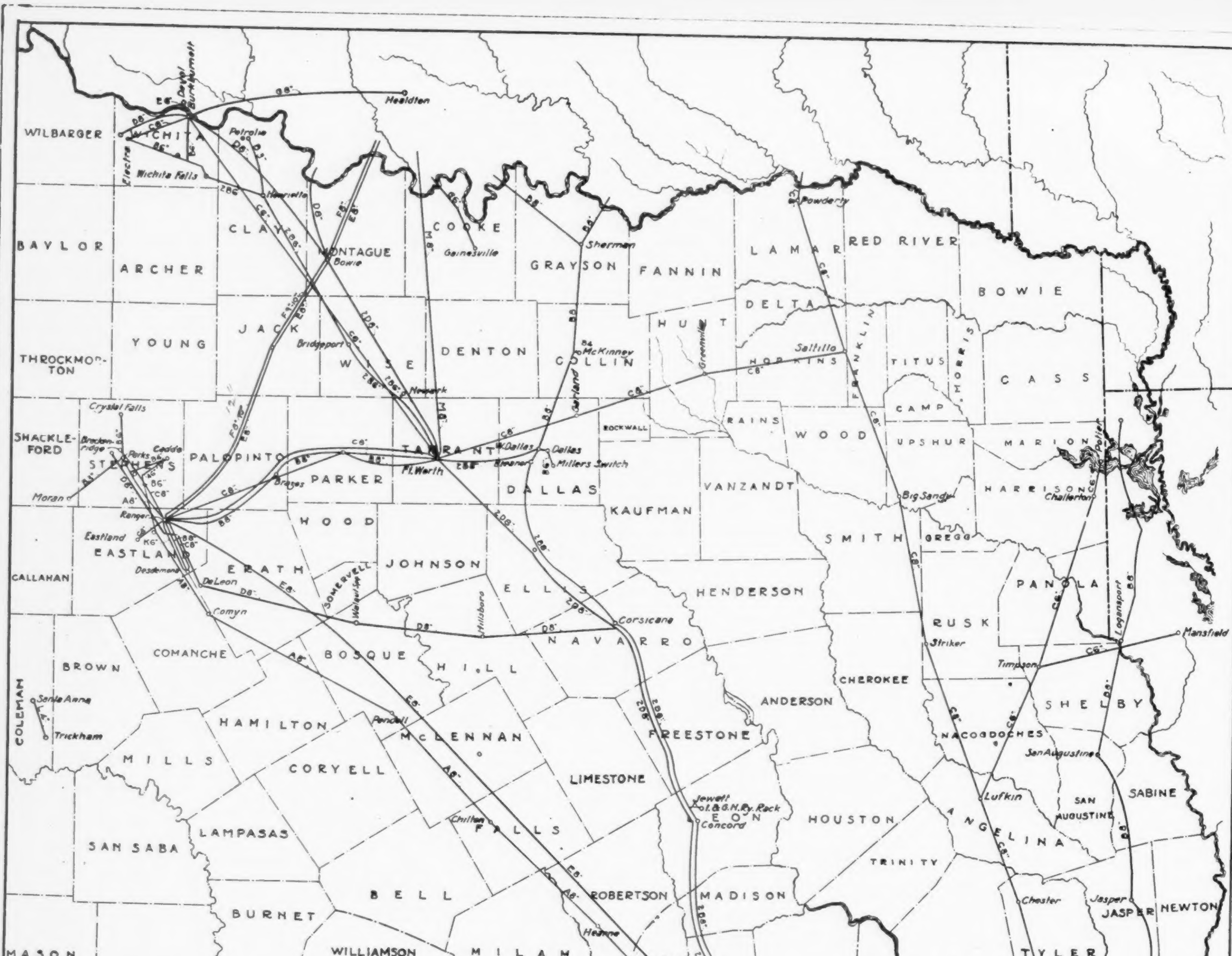
The Oil Weekly's
MAP SHOWING
PIPE LINES IN TEXAS
Scale: 1 in. = 20 Miles
LEGEND
A Humble Pipe Line Co
B Texas Pipe Line Co.
C Gulf Pipe Line Co.
D Magnolia Refining Co
E Sinclair-Gulf Pipe Line Co.
F Prairie Pipe Line Co.
G Empire Pipe Line Co.
H Sun Pipe Line Co.
I Rio Bravo Oil Co
J Grayburg Oil Co.
K United Producers P.L. Co.
L Reel & Ramsey
M Pierce Pipe Line Co.
To Oct. 1, 1919

capacity, 20,000 barrels; 4-inch line from Burkburnett to Northwest Burkburnett; 6-inch line from Burkburnett to Wichita Falls now building, with loading racks on Fort Worth & Denver.

Southern Oil Corporation—20 miles; capacity, 7000 barrels; 4-inch line from Burkburnett to Walters, Okla.; loading racks at Devol and Walters.

J. A. Johnson Pipe Line Company—8 miles; capacity, 12,000 barrels; 6-inch line from Burkburnett to Devol, Okla., loading racks.

Constantin Refining Company—8 miles; capacity, 7000 barrels; 4-inch line from Burkburnett to refinery at Devol, Okla.; also loading racks; another larger line building.

Oklahoma Petroleum & Gasoline Company—8 miles; capacity, 7000 barrels; 4-inch line from Burkburnett to Devol, Okla., loading racks; building another larger line.

Livingston Oil Corporation—8 miles; capacity, 7000 barrels; 4-inch line from Northwest Burkburnett to Devol, Okla., loading racks.

Oklahoma Producers & Refiners Company—40 miles; capacity, 7000 barrels; 4-inch line from Northwest Burkburnett to Lawton, Okla., loading racks.

Empire Pipe Line Company—75 miles; capacity, 20,000 barrels; 8-inch line from Burkburnett to Healdton, Okla., now building.

Newton-Maer Pipe Line Company—8 miles; capacity, 12,000 barrels; 6-inch line from Northwest Burkburnett to Devol, Okla., loading racks.

Mid-Co Petroleum Company—40 miles; capacity, 12,000 barrels; 6-inch line from Northwest Burkburnett to Lawton, Okla., loading racks.

Texhoma Oil & Refining Company—16 miles; capacity, 7000 barrels; 4-inch line from plant at Wichita Falls to Northwest Burkburnett, through Burk shallow field.

Anderson & Gustafson—5 miles; capacity, 7000 barrels; 4-inch line from Burkburnett loading racks to Northwest Burkburnett.

Elliott Jones & Company—5 miles; capacity, 7000 barrels; 4-inch line from Burkburnett loading rack to Northwest Burkburnett.

Noble Oil & Gas Company—5 miles; capacity, 5000 barrels; 3-inch line from Burkburnett loading rack to Northwest Burkburnett.

Lone Star Refining Company—14 miles; capacity, 10,000 barrels; 5-inch line from plant at Wichita Falls to Burkburnett.

American Refining Company—20 miles; capacity, 7000 barrels; 4-inch line from plant at Wichita Falls to Northwest Burkburnett.

Victor Pipe Line Company—7 miles; capacity, 7000 barrels; 4-inch line from Victor refinery at Burkburnett to Northwest Burkburnett.

Western Oil Corporation—5 miles; capacity, 6000 barrels; 4-inch line from Burkburnett loading rack to Northwest Burkburnett.

Red River Pipe Line Company—16 miles; capacity, 12,000 barrels; 6-inch line from Southwestern Producing & Refining Company plant at Wichita Falls to Northwest Burkburnett field, now building.

New Era Pipe Line Company—14 miles; capacity, 12,000 barrels; 6-inch line from New Era plant at Iowa Park to Northwest Burkburnett field.

Woodburn Oil Corporation—8 miles; capacity, 7000 barrels; 4-inch line from Northwest Burkburnett to Devol, Okla.

MAP CORRECTION

On the map on the opposite page the Prairie Pipe Line is credited with an eight and a ten inch North out of Ranger. In stead of an eight and a ten it should be an eight and a twelve.—Editor.

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Ranger Crude Oil **Desdemona Crude Oil**
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at posted market prices, plus a reasonable charge for gathering and loading.

We have ample loading rack facilities at these points, and can move your cars promptly.

We especially recommend Ranger and Desdemona oils, not only for their high gasoline content, but also for their similarities to Pennsylvania Crude in their rich lubricant qualities.

Inquiries particularly solicited from refiners having their own equipment, although we have from time to time a limited number of cars that we can place in service.

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Many of Larger Pipe Lines of Texas Have Their Terminals in South Texas

The following table shows the pipe lines operating in the Coastal section of the state, the larger main lines operating from the north part of the state to the coastal points not being mentioned as they are listed in the Central West Texas field:

Name of Company—	Between points—	Distance	Size in inches
Texas Pipe Line Co.			
Gulf Pipe Line Co.			
Gulf Pipe Line Co.	Goose Creek to Lynchburg	6	8
Rio Bravo Oil Co.	Lynchburg to Crosby	8	8
Texas Pipe Line Co.	Crosby to Dayton	18	8
Humble Pipe Line Co.	Goose Creek to Dayton	22	8
Humble Pipe Line Co.	Humble to Dayton	22	8
Texas Pipe Line Co.	Humble to Sabine Pass	120	8
Grayburg Oil Co.	Humble to Houston	10	6
Root & Ramsey	Humble to Houston	25	8
Gulf Pipe Line Co.	Hull to Raywood	11	6
Gulf Pipe Line Co.	Batson to Saratoga	5	8
*Sinclair Gulf Pipe Line Co.	Saratoga to Sour Lake	9	8
Texas Company	Sour Lake to Port Arthur	32	6
*Humble Pipe Line Co.	Sour Lake to Port Arthur	32	6
	Sour Lake to Port Arthur	35	8
	Garrison to Echo	26	6
Gulf Pipe Line Co.	Port Neches to Nederland	6	4, 5, 6, 8
Gulf Pipe Line Co.	Houston to Crosby to Dayton	35	8
Gulf Pipe Line Co.	Houston to Lynchburg	25	6
Texas Pipe Line Co.	Pledger to Damon	10	6
Texas Pipe Line Co.	Damon to West Columbia	10	6
Sun Pipe Line Co.	West Columbia to Webster	45	8
Texas Pipe Line Co.	Webster to Texas City	20	8
Gulf Pipe Line Co.	Markham to Bay City	9	6
Gulf Pipe Line Co.	San Antonio to Somerset	16	4
Gulf Pipe Line Co.	Santa Anna to Trickham	10	4
Gulf Pipe Line Co.	Lufkin to Patter	100	6
Texas Pipe Line Co.	Timpton to Louisiana border	25	6
Texas Pipe Line Co.	Ranger to Houston	260	8
Gulf Pipe Line Co.	Garrison to Logansport	125	8
Texas Pipe Line Co.	Ranger to Gulf	250	8

*Building, and partially completed.

Note: Capacity—8-inch lines, 20,000 barrels; 6-inch lines, 12,000 barrels; 5-inch, 10,000 barrels, and 4-inch, 7000 barrels.

200,000-BBL. PIPE LINE CAPACITY IS ASSURED FOR WEST TEXAS

THE daily pipe line capacity of all lines touching the West Texas fields, either completed, under construction or being favorably considered, is 220,000 barrels. Of this capacity, about 200,000 barrels is assured, with the completion of adequate pumping stations, and the charging of all lines at capacity.

The Prairie Pipe Line Company has the greatest capacity of any line running West Texas oil. Its system of 8-inch and 12-inch lines north from Ranger to Cushing give it a carrying capacity of 65,000 barrels a day. The lines are arranged in eights and twelves, the arrangement at different points along the route depending upon pumping facilities and elevations.

From each pumping station three 8-inch lines will extend out for about a third of the way to the next station, where they discharge into an equalizing tank. From this point an eight and a twelve are used, or two twelves, to the next station, and so on. This is a new system in pipe line construction, and is calculated to give greater capacity by the reduction of friction.

Texas Company's Double Line

The Texas Company has a double 8-inch system from Dallas to Port Arthur, and a single 8-inch line north through Sherman to Healdton, Okla. The company has a 6-inch line from Moran, in Shackleford County, to Breckenridge, in Stephens County, and on to Ranger. From Ranger to Dallas the company has an 8-inch line. The company also has a 4-inch line from the Black Brothers lease in northern Stephens County to the connection at Caddo. The two lines south from Dallas have a capacity of 40,000 barrels a day.

The Gulf Pipe Line Company has a 6-inch line from Breckenridge to Ranger, an 8-inch line from Ranger to Forth Worth, and two 8-inch lines from Fort Worth to Saltillo Junction, where they connect with the trunk line from Oklahoma to Port Arthur, and also has a line into Burkburnett.

The Magnolia Pipe Line Company has a feeding gravity line from Ranger to De Leon, and an 8-inch line from De Leon to Corsicana, where it connects up with the company's two 8-inch lines from Oklahoma and North Texas to Beaumont.

The Humble Oil and Refining Company has an 8-inch line from Ranger to Houston, following almost an air line, to its refinery on the Ship Channel. The route for this line was first surveyed by the Prairie Pipe Line Company, whose plan it was to deliver fuel oil for the use of the government at Pelican Island, Galveston Bay. When the armistice was signed, the Prairie cancelled its plans, and later the route as far as Houston was adopted by the Humble. The Humble also has a line to Desdemona.

Sinclair interests are laying a line from De Leon to Cushing, Okla., where it will celeld its plans, and later the route as far connect up with the same company lines north and east. This line will be extended on to the gulf.

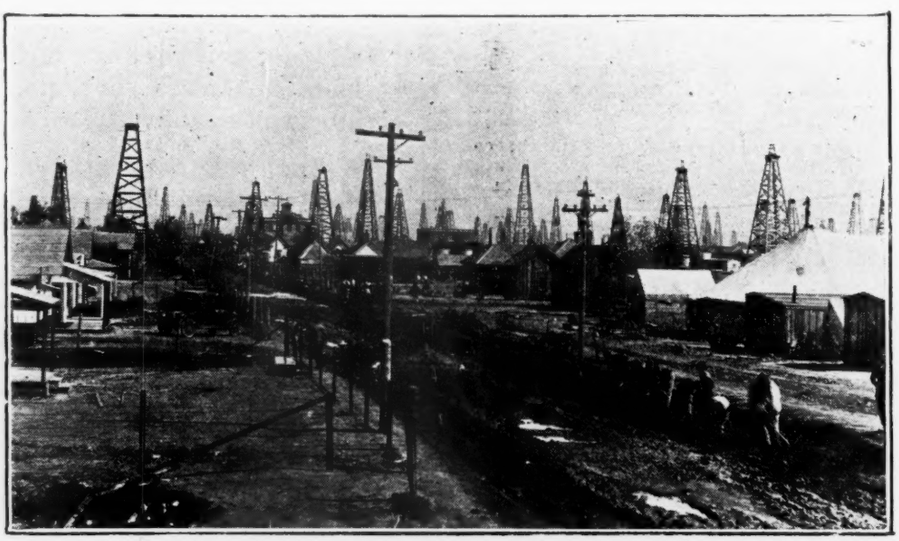
The United Producers Pipe Line Company is building a 6-inch line from Ranger to Fort Worth to supply the Inland Refining Company's plant there, and other independent refineries.

The Sun Company plans a pipe line from West Texas to Aransas Pass.

The Empire interests will build a line through from Louisiana to the gulf.

Up to this time the pipe lines have been sufficient to handle the daily production from the fields in Central West Texas with the exception of from the Desdemona field; but this one pool will soon see the completion of lines sufficient for its needs.

According to figures compiled by The OIL WEEKLY, the Central West Texas district is now being served by pipe lines having a total length of 2824 miles, with a total daily capacity of 300,000 barrels. Two lines are proposed which will run from Ranger to Fort Worth and have a daily capacity of 20,000 barrels each. When these two lines are completed the district



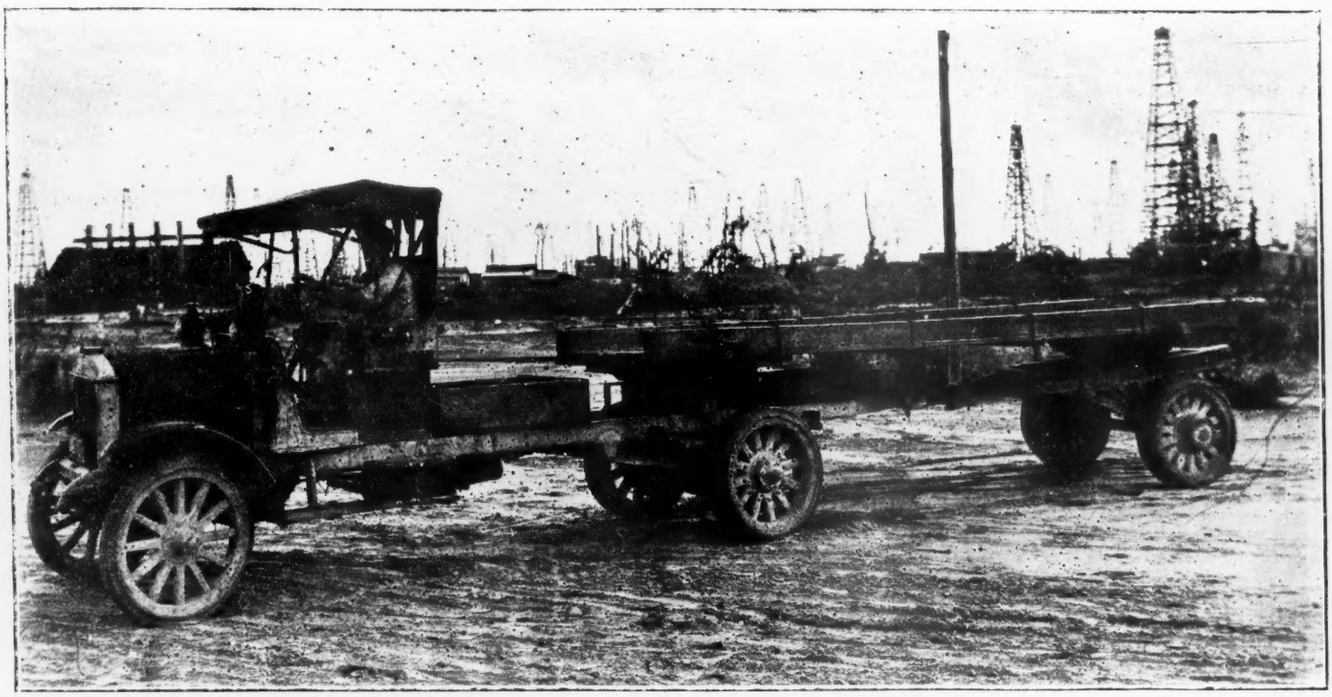
No, Clarice, they are not working the street. That's the last thing done in an oil town. These Parties above are laying a pipe line down Millionaire Alley, at Burkburnett.—Photo by Stevenson

Another

1 Ton to 5 Ton

FEDERAL

Going to the Oil Fields



Dependable and Powerful!

Expresses the sentiment of the men driving Federal Trucks day after day in the Oil Fields. There is no test greater than the services a truck is required to render the oil men. A Federal will not fail to live up to its requirements.

Ask the Federal owners for information.

Then ask for a demonstration.

Do not purchase your next truck until seeing the Federal. Make a good comparison of the other makes you have in mind, and after careful consideration on your part, we are sure it will be another Federal.

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STATE DISTRIBUTOR

Dallas, Texas

Every dealer carries a large stock of parts

will have a total of 3048 miles of pipe lines with a total capacity of 340,000 barrels daily.

Each of the larger companies operating in that district and those with pipe lines have erected a large number of storage tanks to care for the oil, both at the field and at the terminals.

The Magnolia Pipe Line Company has two 8-inch lines running from Bowie to Beaumont. From Bowie into Oklahoma, one of the Magnolia lines is leased to the Prairie Pipe Line Company, leaving only one line serving the Magnolia. From Electra the company has an 8-inch line to Bowie, 20,000 barrels capacity, a distance of about 60 miles. These lines accommodate the Magnolia's refinery in Fort Worth, pass through Corsicana, where the line from DeLeon breaks in, and go to Beaumont.

Following is the list of lines, showing the length and daily capacity:

Humble Oil & Refining Co.----etaoshrdlueta

NAME OF COMPANY	Between points	Distance	Daily barrels capacity
Gulf Pipe Line Company	Texas-Oklahoma line to Port Arthur	458	28,000
*The Texas Company	Texas-Oklahoma line to Port Arthur	458	20,000
The Texas Company	Healdton-Sherman	60	12,000
The Texas Company	Ranger-Dallas	145	20,000
Gulf Pipe Line Company	Ranger-Fort Worth	112	20,000
Gulf Pipe Line Company	Fort Worth-Saltillo	124	20,000
Magnolia Pipe Line Company	DeLeon-Corsicana	155	20,000
Magnolia Pipe Line Company	Healdton-Beaumont	385	20,000
Humble Oil & Refining Co.	Ranger-Houston	250	20,000
United Producers Pipe Line Co.	Desdemona-Ranger-Fort Worth	112	15,000
Prairie Pipe Line Co.	Desdemona-Ranger-Cushing	250	65,000
Sinclair Companies	DeLeon-Cushing	260	20,000
Empire Pipe Line Company	Healdton-Gainesville	55	20,000
**Pierce Oil Corporation	Ranger-Fort Worth	112	20,000
**Steiner Oil Company	Ranger-Fort Worth	112	20,000

*Line has 40,000 barrels capacity south of Dallas.
**Proposed lines.

Building Pipe Lines to Care for Big Production of Homer Field

DEVELOPED potential production in the Claiborne field has kept far in advance of oil transportation facilities. In facts, means are not available for disposition of the oil to enable those interested to make an accurate estimate of the possible production of the largest wells brought in. Tests to the capacity of storage available have been brought to an end in about fifteen minutes, and indicated 23,000 barrels instead of 7000, and over 15,000 barrels instead of 5,000, the smaller figures being the conservative estimates originally credited to the wells.

Actual production of the Claiborne field as indicated by pipe line runs has never reached 9000 barrels, so that one well alone is potentially capable of producing twice as much oil as has ever been actually marketed from the pool. Most conservative estimates of the production developed in this field for the month of September alone greatly exceed present possibilities in the way of transportation, as the present outlet is limited to tank cars loaded from racks at Homer, where the Standard Oil Company, the Rowe Oil Corporation and the Gilliland & Foster Company have constructed pipe line connections with their production. The Standard has constructed ten miles, has 25 miles strung, and has completed survey of a line nearly 50 miles in length. to connect with their main trunk line; but this is the only trunk line connection actually under process of construction, although a number of projects are in contemplation with a view to connecting this production up with local refineries in prospect or actual operation.

Inefficient railroad facilities have been charged with retarding to some extent the development of the Claiborne field, but railroad officials justify an embargo now in effect against dead freight carload shipments to Homer on the ground that the congestion at that point is due to failure on the part of consignees to promptly unload shipments, and for that reason the permit system of acceptance of Homer shipments has been ordered. However, there is doubt that serious delays have occurred to the movement of shipments, an illustration being that of a standard rig delivered at Shreveport for movement to Homer early in August, which failed to reach there until about September 20.

A RECORD ON FINISHING A WELL.

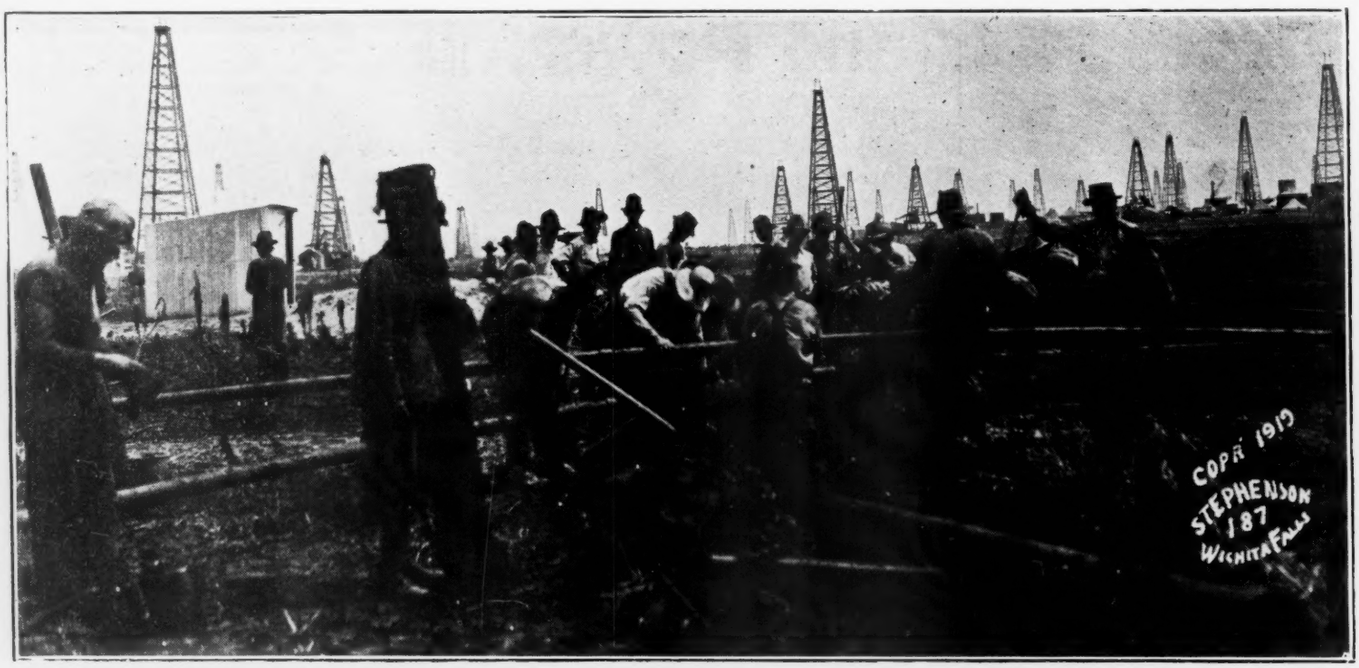
A crew of the Guffey Petroleum Company at Batson can lay claim to the record in shortness of time required in finishing a producing well, thinks J. H. Tucker, superintendent of production of the Gulf Production Company.

"Back in 1904 as I was on my way to Batson I learned that one well we were drilling there had a shallow showing, and when I got there I decided that we would test it out," said Tucker.

"At that time it was ten o'clock in the morning.

"We skidded the rig over, drilled down to 280 feet, set screen, bailed it and had an eight barrel producer in time for me to catch the 4:00 o'clock train back to Beaumont that afternoon.

However, in those days it was no trick to drill four wells a month, including rigging up time. Production was found at 900 feet in these wells. "We would finish a well every Sunday," said Tucker.



RUSHING WORK ON SMALL LINES TO TAKE CARE OF PRODUCTION IN THE BURK-WAGGONER FIELD AT A TIME WHEN THE OVER-PRODUCTION WAS MORE THAN 20,000 BARRELS A DAY.

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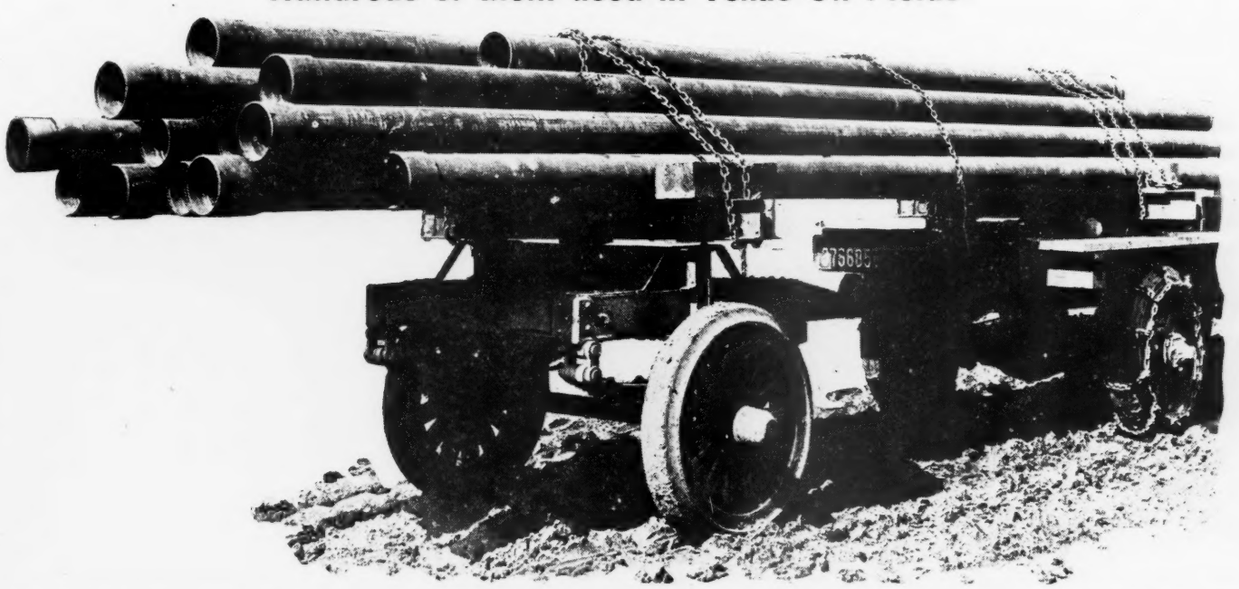

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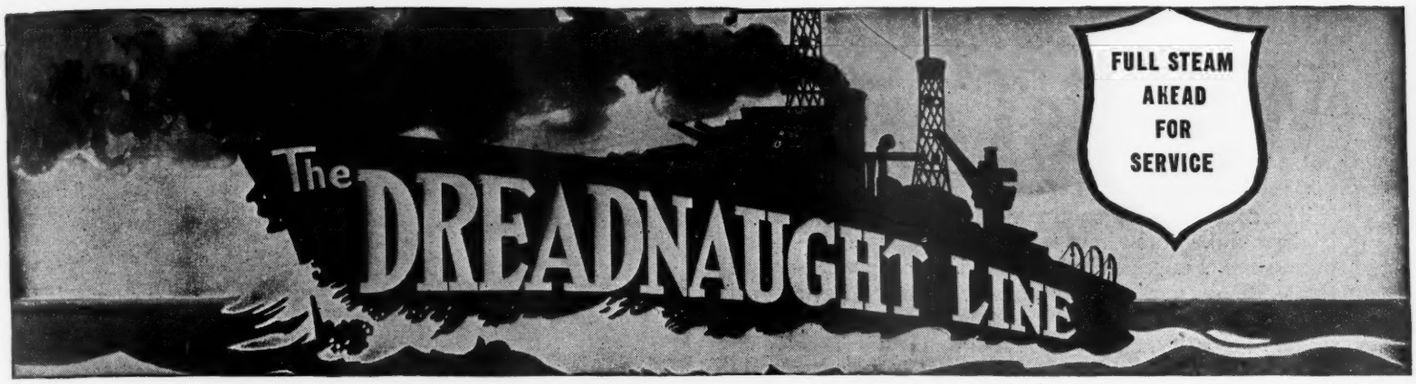

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What is Cost?

The real cost of a commodity is always in the background. Sometimes it is never ascertained—because the purchase gives service for generations. However, the corner-stone, frame-work and roof of good buying is Value—measured in terms of Quality, Service and Originality.

QUALITY in a broad sense is composite. In Oil and Gas Well Drilling Equipment and Tankage it means the selection of the materials best suited to withstand exposure, rough handling and continuous use. It means rigorous inspection during fabrication and the loyal interest of intelligent and experienced employees.

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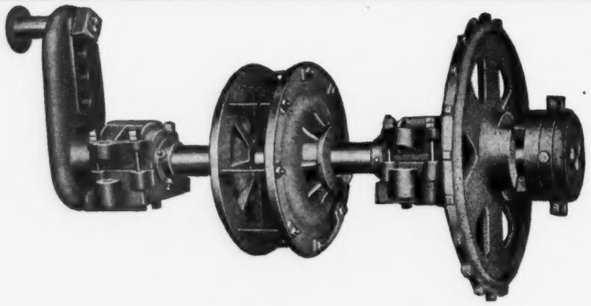

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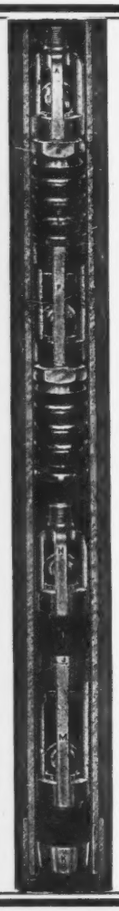

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Have more than 50 producing wells.

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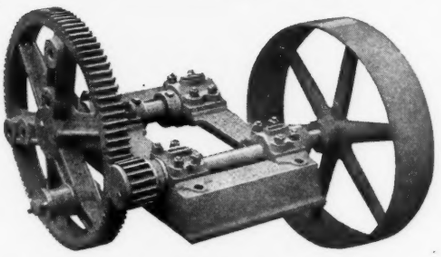
B. FRANK WOOD, General Manager

INVADER OIL & REFINING COMPANY
MUSKOGEE, OKLAHOMA

Marion Keystone Pumping Jack



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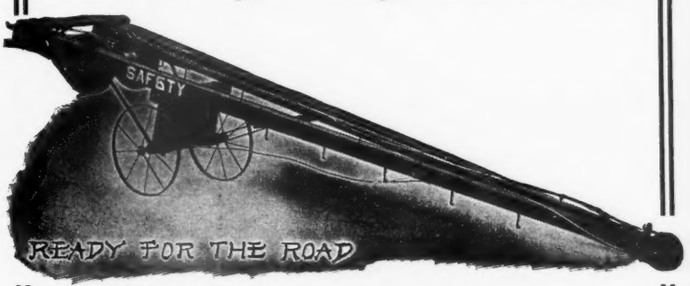

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May 6.....23,500 feet
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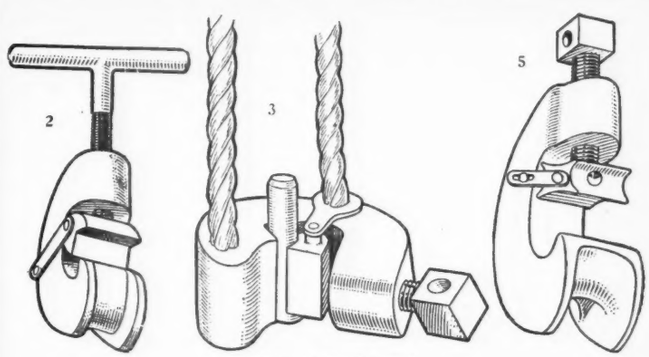

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Houston GOGGAN BLDG. — Formerly THE GULF COAST OIL NEWS — Dallas SOUTHLAND LIFE BLDG.

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IN THIS WEEK'S ISSUE

SEETHING AGAIN

The finding of a good oil sand in the Kemp-Munger-Allen well near Iowa Park in Wichita County may mean another pool, and Wichita Falls is booming again. Page 40.

LET'S MOVE TO FIELDS

Fred Ennist tells about how employees of oil companies in the fields are being housed on page 43.

WATCH THE REFINERIES

Texas is sure coming strong with her new refineries. Old ones are increasing capacities and some of the big companies are spreading out. Pages 51 and 52.

GUSHERS ARE COMMONPLACE

Fifteen thousand barrel gushers are becoming commonplace in the Homer field. See pages 14 and 24.

BEGGS DISTRICT NOT BEGGING

Things were rather dull in Oklahoma last week, but Beggs district continued reporting new wells. Page 26.

OH, THAT MUD!

Stephens County is doing fairly well, but the rains have put the roads to the bad. Page 28.

SALT WATER NOT SO BAD

It is true that salt water is bothering at Desdemona, but not to the extent sometimes reported. Page 36.

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NO THEFTS NOW

The roads are so muddy in the Ranger field that the thieves even refuse to try to travel over them. For once, derricks and other smaller items are safe, even when not watched. Page 32.

PRODUCERS MEAN BUSINESS

The producers at Burkburnett have banded together and will try to stop the sale of crude at less than posted price. Page 38.

GRAB UP LEASES

Land Commissioner Robinson had no trouble in finding buyers for leases under the new state law. Page 22.

SUITS FOLLOW FIELDS

Now that the Homer field in Louisiana is proven big, the suits affecting titles start. Page 22.

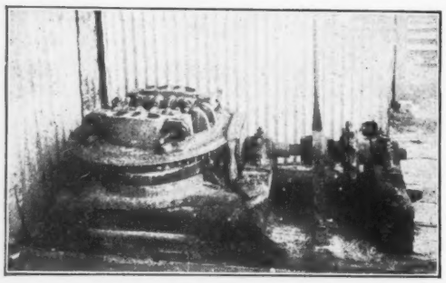
OIL TOWNS DO GROW

Do oil towns grow? Just see what Wichita Falls did. Page 23.

OIL IN STORAGE

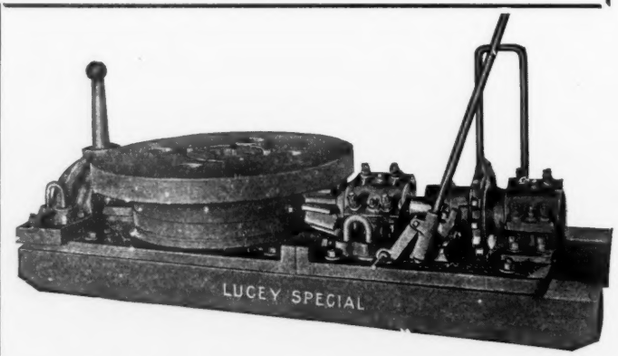
Oil held in storage by pipe line companies in Texas on September 30 amounted to 16,917,989 barrels, according to a report made public Thursday by the railroad commission. At that time there were 2,310,166 barrels held for others; 8,911,889 barrels owned and held by pipe line companies, and the unfilled storage capacity aggregated 5,695,932 barrels. Eight pipe line companies reported to the commission.

What Comparisons Reveal



A FEW short years ago the rotary on the left was considered a marvel in mechanical design and created endless comment when put to work on a hole. Of course, age has detracted from its present appearance, but discounting that fact, if polished and painted and put on mahogany skids, it would stand out today as a crude, awkward, inefficient piece of machinery, only fit for exhibition of antiques or the scrap heap.

OPPOSITE we have the latest Lucey Rotary with the flat table, V Grove-Stem gripping device, complete semi-steel base, shrouded gear teeth, protected cones, fool-proof locking device, and many other improvements that are characteristic of present day progress.



These improvements do not stop with the Rotary. They extend throughout the entire outfit, enabling the driller of today to accomplish results that for years were considered impossible.

The operator that takes pride in his equipment, watches his well records, and expects fast drilling, must furnish his help with labor-saving machinery such as will be found throughout the entire Lucey line.

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